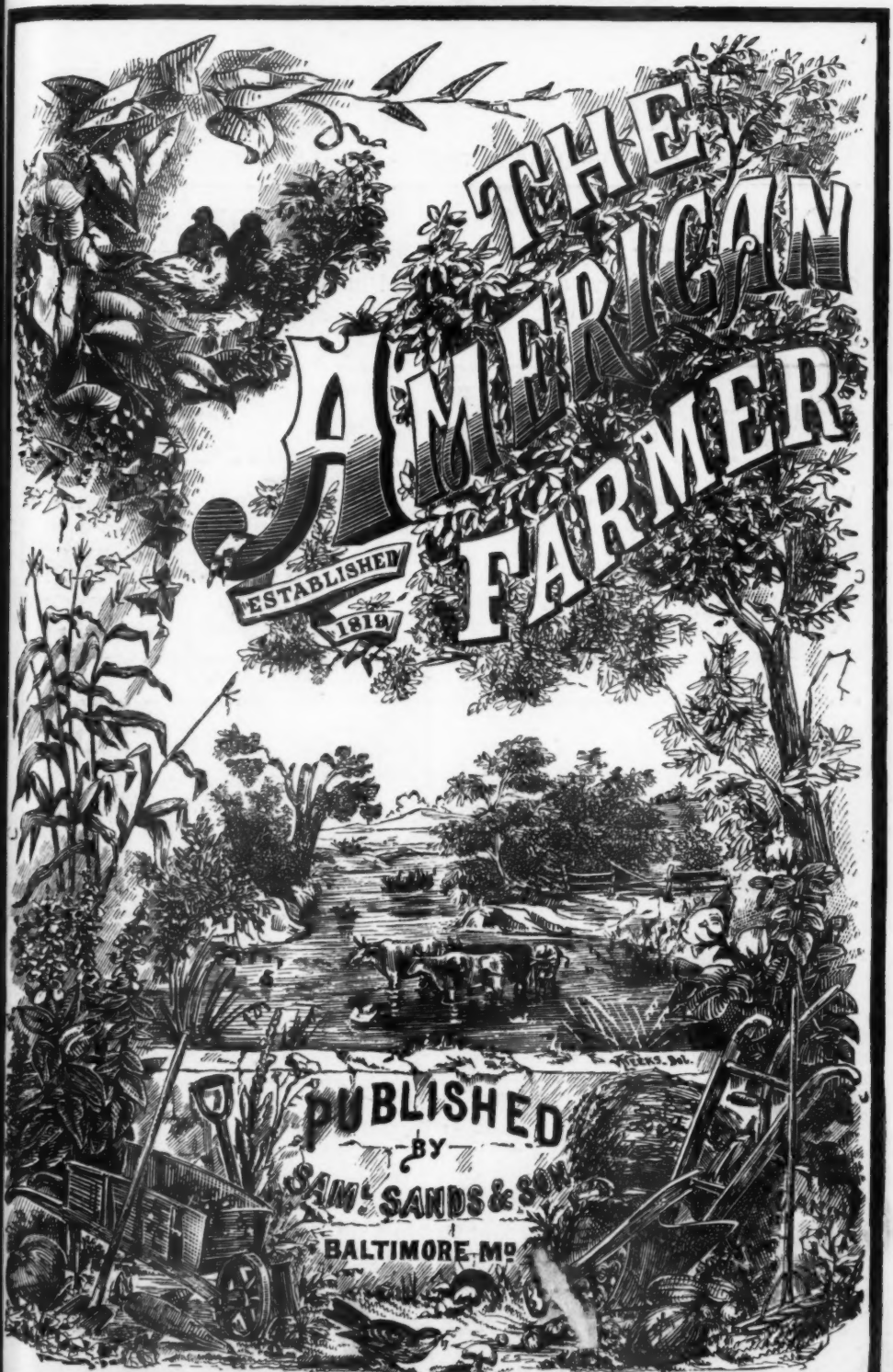

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THE

AMERICAN FARMER.

"O FORTUNATOS NIMIUM SUA SI BONA NORINT
"AGRICOLAS." . . . . . *Virg.*

PUBLISHED BY SAML. SANDS & SON, BALTIMORE, MD.

VOL. IX.—No. 11.] NOVEMBER, 1880. [NEW SERIES.

Composting.

Using Lime, Salt and Ashes in Composts.

Dr. N. A. Pratt, State chemist of Georgia, replies through the *Enterprise* to some inquiries on this head as follows:

1st. "Is it safe to compost lime with stable manure and cotton seed?"

REPLY.—In the hands of an advanced agriculturist or chemist such an admixture might be worked to advantage, proper absorbents of the gases evolved having been provided; but in the ordinary system of composting in vogue among farmers, the result with either lime or ashes is apt to be injurious, if not disastrous, in this: All of the ammonia ready formed, or that may be formed in the mass, is liable to be driven off before sufficient vegetable mould is formed from the manure to hold or condense it. With cotton seed the case is somewhat different, in this: There is no ready-formed ammonia to be driven off by the caustic and alkaline lime or ashes, and both these do assist very materially in the breaking up and disintegration of the tissues; but at the same time ammonia is also formed, and is in its turn driven off by the remnant of caustic lime which still exists in the mass; for caustic lime, even in an atmosphere of carbonic acid, such as exists in a compost heap, only takes up readily one-half of the carbonic acid it is capable of absorbing; the other half still remains caustic and is capable of expelling ammonia from any of its compounds. An absorbent covering of dry road-clay, charcoal, swamp muck, chip dirt or rich loam, or alternate layers of land plaster or acid phosphates, can be made to retain the escaping ammonia; but in the subsequent turning and mixing the lime still acts, and is liable to expel the ammonia, unless special care is taken to secure it.

The fact is, that the most valuable materials for composting, viz: stable or barn-yard manure, cotton seed, green weeds, offal, carcasses, etc., etc., undergo fermentation and putrefaction so readily, under favorable conditions of moisture and temperature, that the farmer can well dispense with the assistance rendered by lime or ashes, rather than risk the loss of his ammonia; but he must bear in mind that he can use freely, and to advantage, *lime in combination*; that is, carbonate, sulphate or phosphate, marl, land plaster, or acid phosphates or bones.

Again, the farmers are recommended to use lime in composting matters of less value, like straw, chip dirt, grass roots, leaves and scrapings; but this should be done in a separate compost.

2d. "What chemical action takes place in such case from fermentation" (lime being mixed)?

The lime undoubtedly retards the decomposition known as "fermentation and putrefaction," but it attacks violently all organic substance, disintegrating easily the softer parts, which act as connective tissue to the harder portions, viz: woody fibre and cellulose. The dissolved parts contain all the nitrogen and ammonia-producing elements. The woody fibre and cellulose remain chemically unchanged, but disintegrated and broken up. The dissolved portions speedily decompose, their nitrogen forming ammonia, and also nitric acid, *if exposed to the air*, while the fibre is also oxidized and slowly burnt, giving rise to vegetable humus.

3d. "What ameliorating effect is produced by slaking the lime with brine or salt?"

I know of *none*, except to retard or altogether suspend the process of fermentation or putrefaction. Both are very effective "antiseptics," or "preventives of putrefaction," among which are also well known alcohol, corrosive sublimate, arsenic; the volatile oils—creosote, carbolic acid, etc., etc.; or even heat, at 212° F.

There is a notion prevailing among some that the "salt and lime mixture"—that is to say, five or six bushels of lime slaked in the brine that one bushel of salt will make—is superior in favorable action to lime alone. I have incidentally looked into the matter, and am led to believe that the admixture makes no chemical change in the lime, and that the *salt* remains *salt*, with all its antiseptic qualities unimpaired. The lime, however, is dissolved in nearly double proportion, and naturally would be, chemically, doubly as active, and consequently becomes the sooner carbonated and mild. In this condition it acts best in the formation of nitric acid. Again, there is little doubt that a small dose of salt does improve most soils, scarcely as plant

food, but in keeping the soil moist and in destroying noxious insects.

4th. "Is there any advantage in adding land plaster to the formula for composting with acid phosphate recommended by the Agricultural Department?"

Any good acid phosphate contains from 45 to 50 per cent. of land plaster, which is made in the process of manufacture.

The formula calls for 700 pounds of acid phosphate to the ton—that is, 350 pounds of land plaster or sulphate of lime, which, at 80 pounds per bushel, equals 4½ bushels of land plaster to the ton of compost. This quantity I would think amply sufficient, while the phosphoric acid is also available for holding the ammonia, and the vegetable mould or humus formed stands as a sentinel to arrest any fugitive atoms that may attempt to escape.

5th. "May salt be safely added to that formula?"

6th. "May potash in shape of ashes be added?"

There is no objection to the addition of either of these, or of German potash salts. The salt has a tendency to retain moisture in the heap, and thus to moderate and regulate the interior heat of the mass, which, if unchecked, leads to "fire-fanging" and consequent disaster. In the case of ashes, the caustic or carbonated potash is speedily neutralized by the phosphoric acid of the acid phosphate, forming the very valuable salt phosphate of potash, and the other ingredients of the ashes add much to the value of the compost.

I have experienced much difficulty in replying to the questions satisfactorily to myself, and fear they will scarcely be so to your correspondent—unless he is informed fully of the diverse chemical actions which arise in a compost heap—according to the conditions of *temperature, moisture, porosity of the mass, exposure to the atmosphere*, and, lastly, the material of which the mass is composed. Undoubtedly, composting—or, rather, I would say, *the saving of all valuable residues* on the farm, in its most available form—is of vastly more importance to the owner of the land than even the question, "How many bales of cotton can I make?" and at the basis lies a knowledge of the chemical forces involved in the art of composting.

Within two months, a gentleman, intelligent, active, enterprising, largely engaged in cotton raising, told me that composting, or utilizing home resources, in his hands had proved a perfect failure. That he had, *regardless of cost*, composted cotton seed, stable manure, lime, acid phosphates, and applied bravely to his land, at a cost to him of $8 to $10 per acre, and he saw little or no beneficial result; while from the locality—perhaps one-fourth of an acre—where he had set fire to an immense pile of wheat straw, lying in the open field, he had gotten remarkable results.

How immensely more remarkable results would have been seen had he composted that pile of straw judiciously and applied it to fifty acres!

To the farmer there is no more important question. To the advanced agriculturist it is "applied science." The subject is one beset with difficulties, as are all those with which the *successful farmer* has to deal. In all his operations so many and variable conditions prevail, so many and variable influences are at work, that to be successful requires of the farmer more general intelligence, better powers of observation, quicker appreciation and more prompt action than is required in any other profession. Manufacturers have spent their lives in investigating the art of making *wine, beer, alcohol* and even *vinegar*. They have employed chemists for years to study up the great principles on which these successful arts depend. Even governments have offered heavy premiums, and established working laboratories and salaried scientific investigators, in order to discover one principle that would facilitate the manufacture, improve the quality or prevent deterioration of the product of these arts. Still, the compost heap, the utilization of refuse, of far more importance to the farmers of Georgia than all the wine, beer and vinegar of the continent of Europe, remains uninvestigated and unimproved.

Thoughtful men have succeeded in making good composts, and have cheerfully given the result of their experience for the benefit of others. The Agricultural Department of Georgia has widely circulated the knowledge thus obtained. Still there is much to be done, especially in the working out of general principles that can be applied to the diverse conditions that surround each farmer.

There are at least three chemical operations involved in the art of composting, each of which produces different results, all of which seem, under the conditions ordinarily existing, to be necessary and unavoidable. Still, the conditions of *exposure, moisture, temperature* and *material* can be controlled and one or the other process made to prevail.

Land Draining.

Mr. W. D. Philbrick, an experienced gardener, gives to the *American Cultivator* the following suggestions on this subject:

Tile are better than stone, and if labor is to be paid for, and is worth anything, they are cheaper. If stone are at hand, and need removal to clear the land on which they lie, the farmer can afford to pay $15 to $30 per acre for tile, and dump the stone in a pile, rather than use them for covered drains. The tile are less likely to clog up with sand and mud, and cost less than half the labor to dig the drains and lay them.

It is not a good plan to dig drains long before they are laid with tile or stone. They are apt to cave in, especially in frosty weather; and, in case it is desirable to do such work in winter, it is a better plan to lay out the drains in the fall, remove the sod, and plow frequently the bottom of the ditches thus partially dug, in order to keep them from freezing. As fast as the bottoms are dug out to proper grade, they should be laid with tile or stone, and immediately covered.

One very essential point, in fact the most essential one in drainage, is to give the drains a continuous fall. If any point is dug out too low, the water will stand there, and deposit mud until the passage becomes obstructed. It is easy enough to attain this continuous fall if there is water flowing in the ditch at the time of digging, as the water will stand at any point below the proper grade; but in case the ditch is dry and the bottom of uneven character as to hardness, it will need close watching to prevent the digger from going too deep in spots where the bottom is soft. The level is the only safe guide in such cases.

When the bottom is clay or hard gravel, there is little trouble in making covered drains work well, especially where there is a good fall to the water; but when the bottom is sandy or peaty, and the fall slight, much care will be required to secure good working of the drains. Stones are not satisfactory for such places, and tiles only are to be trusted; these should be laid on strips of rough boards, if the bottom is soft, to prevent settling, and should be covered with an inch or two of tan-bark or sawdust, if it can be had, to prevent infiltration of mud or sand.

The best place to utilize stone is in laying open ditches, walls, &c., or making roads. To dig a covered drain for stone requires the removal of more than double the earth needed for tile, and after all is not so good a job.

It is often desirable to introduce surface water into a system of covered drains; to do this safely the only way is to let the surface water fall into a well, or catch-basin, dug out one or two feet below the level of the drains, large enough to allow the flow of surface water to settle and deposit its mud before entering the drains; the accumulated mud will need removal as occasion requires.

The cost of the drainage of many a wet hole would be returned in one to three years of good crops, and the land thus reclaimed is usually the very best in New England, being able to withstand drouth better than high land, and containing abundance of vegetable mould.

In case the land to be drained is a pure peat bog, it will need the addition of sand, or loam, as well as drainage, to make really good soil. Pure peat when drained becomes dry and dusty, and needs the admixture of the soil to make it fertile; three or four inches of any kind of loam spread and worked in, will accomplish this purpose.

Farm Capital.

The capital of the farmer consists mainly of land, stock and cash; but there are many other items that enter into his capital, such as farm implements, manure, and the most important of all, labor, which are generally overlooked in estimating capital or stock in trade. Capital may be either productive or unproductive. A thousand dollars in gold or silver coin locked up in a strong box, or a hundred acres of uncultivated lands, may be properly considered capital; but so long as they are kept in this condition they produce nothing, and the owner may be growing poorer all the time, instead of richer. Increase of wealth does not depend so much upon the amount of capital possessed as upon the use which is made of it, and in no business is this more conspicuous than in agriculture.

We have known young men who commenced farming with fifty acres of land, upon which they expended annually in manure, labor, &c., twenty per cent. of the value of the land, and received in produce forty to fifty per cent.—Encouraged by the success, they added fifty acres more with the hope of doubling the profit. But their expenditure in manure and labor was not proportionately increased, and as a natural consequence the products were diminished in proportion. Not seeming to understand the cause of the falling off in profits, they have gone on purchasing more land without increasing their active capital, until a point is reached where profit ceases altogether, and their farm operations actually begin to run them in debt. They have converted all their productive into unproductive capital, which lies dead upon their hands like gold and silver buried in the ground.

Thousands of farmers, with small or moderate means, have been financially ruined by an uncontrollable desire to possess more land. Every acre of land that a farmer owns that pays him nothing and is not increasing in value, is running him behind, because the taxes must always be paid. We do not deny that a large farm may be made proportionately as profitable as a small one, but an unvarying condition must be a proportionate expenditure of capital in manure and labor upon it, a thing rarely done for lack of means. That part of the farm upon which the most capital is expended in proportion to its area is the garden, and every one knows that the garden is the most productive and profitable part of the farm; in fact, we have known cases where the net profit of a garden of an area of a single acre was greater than that of all the rest of the farm; the same holds true of a small, well-cultivated farm, as compared with a large, poorly-cultivated one. The point in all this which we would emphasize is, that no farmer should try to possess more land or undertake the cultivation of more acres than he has capital to manage well; for if he does he will find that he is losing the capital he has, and is liable to become poor with the means of great wealth in his hands. In every point of view, the thorough cultivator is the gainer; in his comforts, in his pleasures and in his profits. The full capabilities of our lands can never be understood, or the amount of products we might offer for sale from a small farm be known, until a more perfect system of farming shall be more generally adopted.

American Grain in Europe.

There is much speculation over the future course of grain exports from the United States, and as to the demand for actual consumption in Europe. It is assumed in some quarters that a considerable share of the present crop will neither be needed here nor required to make up the deficiencies of English and French crops. In the event of a large surplus being thrown on the market it is very certain that consumption would increase. In the general account of ex-

changes, corn is taking a more important place than before, and it has gained in price materially during the summer, although wheat has declined. The demand for it is another striking evidence of the dependence of Europe for the staples of food upon this country, a dependence which increases with every year, with little regard to the current crops. Taking the trade in all kinds of grain and food, nothing has exceeded the business of the last three months, and at the very crisis of doubt and differences of opinion the greatest aggregates are exported. The latest reports from the Western states promise an increase in the wheat crop of Minnesota, Dakota and Iowa—all the extreme Western belt—while for Illinois and Missouri there is some deficiency reported. On the whole, it is now asserted that 480,000,000 bushels will constitute the harvest on a fair producing estimate. The question is, whether the enormous surplus will be demanded for the supply of Europe. In the face of any other state of facts than that recently disclosed as to the deficiency of the English and French harvests, it might be thought impossible to market so much there, but it is known that no part of the enormous shipmemts of the last five or six months have been held for speculative purposes or in any way reserved for immediate consumption. There is no accumulation, either in foreign ports or at our own seabord cities. The arrivals from the interior are immedinately shipped in all cases, and, in fact, the shipping orders often cannot be filled from grain in elevators; they must await arrivals of grain on the way. The whole trade is conducted upon the basis of the demand in Europe, and the cable gives constant report of the necessities of these markets. Our part is simply to respond to it. So much for the general speculation. As we said in our last issue, it is yet too early to obtain satisfactory figures regarding the surplus of cereals for export, and the deficiencies of the European states. Without the two together it is not possible to make even approximately exact calculations. The uncertain element in the problem is the increase of consumption both at home and in Europe by reason of a decrease in price. It cannot be doubted that the increase of consumption, owing to the influence named, will be very great; this in turn will stimulate general trade. It is our intention, so soon as complete returns of the European yield can be obtained, to publish an authoritative summary of the statistical position of the principal cereal crops.—*Bradstreet's.*

Hog Products.

The Export Trade and the Drift of Prices.

The recent announcement of "another corner in pork," meaning that pork is higher at Chicago than at either New York or Boston, shows, says the *American Cultivator*, how easy it is for one or more heavy dealers in the article to so manipulate the market as to compel buyers to pay as high as $20 per barrel for what would otherwise only command two-thirds as much. But there is no law prohibiting anybody from speculating in the necessaries of life, and oftentimes farmers may take advantage of such periods, selling their products at high prices to speculators who strive to control the market.

The Summer pork-packing movement has been satisfactory, being sufficiently large to meet the prospective demand. Barrelled pork is one of the great industries of the nation, and the shipments of lard abroad have become immense. The regular barrel-packing business is now carried on nearer the base of the raw material, and hence it is pushed more largely in the West. Pork-packing in the West has increased from 1,652,220 head to over 6,000,000, in round numbers, during the past thirty years. The business, of late years, has been enlarging in the South. Canada has also enlarged her pork-packing operations to an extent which indicates the hope of supplying her own demand. A new feature of the business is the receipt of a considerable number of hogs from Texas. The production of swine in that State has greatly increased in numbers and improved in quality. The old "razor-backs" of the generation passing away are giving place to modern improved breeds, especially in northern Texas, where hogs may be found equal in value to any now raised in the Northern States, being the best strains of Poland China, Chester White, Berkshire, etc. Of barrelled pork packed in the country about 70 per cent. is put up in six cities—Chicago, Cincinnati, St. Louis, Indianapolis, Milwaukee and Louisville.

Pork product is known in commercial parlance as mess pork, prime mess, extra prime, clear and rump, the first mentioned taking the lead in the quantity produced. The receipts of hogs on the seaboard are, to a small extent, for packing purposes, the larger portion being taken by butchers for the supply of fresh meat. The four cities of New York, Boston, Philadelphia and Baltimore handle between three and four million hogs annually. One of the largest packing houses east of the Alleghany Mountains is located at East Cambridge, near the Somerville line, a few miles from Boston.

To meet the increased foreign demand, there has been an enlargement of production, both in the visible amount gathered by statisticians and in the invisible amounts made for home consumption, while the economic value of time in production is better appreciated than was the case even ten years ago, and its results are manifesting themselves in increased production and in better margins of profit. Again, notwithstanding the average age of killing is much reduced, the average weight is increased. Thirty years ago the average weight of hogs killed in Cincinnati was 200 pounds; it has been about 225 pounds for the past three years.

The different items of hog products present some curious phases when subjected to analysis. The value per pound of bacon and hams has ranged from 8.9 cents to 12.3 during the past ten years; lard has fluctuated from 9.2 cents to 13.4 cents per pound, and pork has varied from 7.3 cents to 10.9 cents per pound. It is also a noticeable fact that in one year, when the production of bacon and hams was the largest, the price was also highest with a single exception; and the same was true of lard and pork. But

there were special reasons for this, the export demand having been unprecedented in that season. Over 3,500,000,000 pounds of lard alone have been exported in the past decade. The average yield of lard per head for each hog is estimated at thirty pounds for fourteen leading States, Illinois being credited with the fattest animals. Some packers choose light hogs. The general average cost per cental of hogs packed in the different States has varied from $4.65 to $8.82 in a series of years. The average net weight per head has varied from 201 pounds to 232 pounds.

Europe takes about 90 per cent. of our bacon and hams, 30 per cent. of the barrelled pork and 75 per cent. of the lard, or about 85 per cent. of the whole export of hog products. Great Britain leads in imports of the American pork product; our next best customers are Germany, then France, Belgium, the West Indies, South America (with which we are increasing our export trade generally) and a small export is made to Africa and to various islands in the Pacific and Indian oceans. Cuba now deals almost exclusively with us in bacon, hams and lard, while the other West India Islands invest mostly in barrelled pork.

Prices of hog products, especially pork and lard, have varied much in the past four or five years. Pork, which has been quite low until within a few weeks past, is now threatened with the prices of 1876, when prime was quoted at $19 to $19.50 in May of that year, and mess at $22.50 and $22.75; in October of that year, mess pork was quoted at $17.75 to $18 and prime at $16.50 and $17. In the same year lard was quoted at 14 and 14¼ cents per pound in May, but in October it declined to 11 and 11¼ cents. At this writing sales of pork have been made at $18.20 and $18.30 for October and at $12.45 and $12.75 for November, and even lower rates for January delivery. Lard has been selling at $7.75 and $7.80 for future delivery, say in November and January. Short ribs (one transaction involving 1,250,000 pounds) at $7.75 and $7.85 for October delivery. Sales of hogs at the leading points for light packing and shipping grades have been at $4.90 and $5.10 per hundred, and $4.60 and $4.90 for heavy packing. These sales (which we quote for the purpose of giving the present drift of the market) included animals that averaged in lots all the way from 172 pounds to 320 pounds.

It will be noticed that some of these lots of hogs weighed considerable more than others. It is alleged that the farmer who knows his business finds much profit in hog raising. A farmer in Kentucky, it is stated, bought 210 hogs, and corn to feed them, for $3,563; fed and sold them, averaging 323 pounds, for $6,640, and refused $954 for 111 shoats which he had raised from them. A Lawrence county farmer, in New York, states that four nine-months' pigs were killed in that place, the dressed weight of which was 400, 401, 418, 450 pounds respectively. A New Jersey farmer talks of 1,963 pounds of pork raised by him in fifteen months and nineteen days, from which he realized a net profit of $119.41. No doubt there is money in pork raising under proper conditions.

Since March 1 and including twenty-eight weeks the number of hogs packed aggregate 4,310,901, against 2,885,658 in the same time last year; and the Winter packing figures up 6,950,000, against 7,480,000. Total packing since Nov. 1. 11,260,000, against 10,385.000. Exports since Nov. 1, of meats, 785,000,000, against 766,200,000; lard, 347,000,000 pounds, against 304,100,000; total product, 1,132,000,000 pounds, against 1,070,600,000 pounds. These are royal figures, expressive of the American trade in hog products. Hogs have declined about 20 cents per 100 pounds in the Chicago market, and the receipts at that point are running steadily below the corresponding time last year.

It is believed that packers have made up their minds to pay higher prices for hogs in November. Ten months ago hogs were selling in the great distributing points at $3.50 and $3.75 for packing grades, but soon after prices advanced to $4.50 and $4.70. The receipts of the animals at seaboard since the first of March show only a small increase over the corresponding time last year. It is, however, generally admitted that the present advanced price of pork in our city markets is due more to the operations of speculators than to any increased legitimate demand for pork or to any serious falling off in the supply. Prices for hogs in the country have not advanced in the same proportion as prices for barrelled meat in city markets, yet it would seem to be a good time to sell fat hogs, especially for those who need the cash in hand.

Our Calling.

It is a well-established principle of human nature that those are apt to be respected who respect themselves. Unfortunately the reverse is also true, and he who looks upon his occupation as drudgery will almost certainly be regarded as a drudge. If farming and farmers are to assume a position commensurate with their importance, the tillers of the soil must take a broad and comprehensive view of their occupation and its relations to other industries. We must respect our calling and ourselves. We must realize and make others realize that prosperity to the farmer means prosperity to all the busy forms of industry, and that a failure of crops brings in its train depression and ruin, even to apparently unconnected occupations; just as the toppling of some huge cliff into the sea may, by the waves thrown up in its fall, overwhelm frail crafts floating quietly in distant waters. The illustrious men of past times have considered agriculture as the foundation-stone of all prosperity, and a country life as tending to the increase of virtue and content. Horace and Virgil have sung its praises. Orators and statesmen have acquired new powers to serve their fellow-men by communing with nature in their rural homes. It is an instinct (against which we strive in vain) to acquire land, however small the quantity, and a sense of manhood never felt before comes over every one who stands for the first time under his own vine and fig-tree. Until a people becomes fixed by the occupation of permanent homes and the duties pertaining to the cultivation and securing of crops, no growth as

a State is possible. The secret of the prosperity of France and her wonderful recuperation from the ravages of desolating wars may be found in the fact that the land is held in small quantities by a great number of her people, and that the government fosters agriculture and brings science and organized skill to its aid. England is beginning to realize that commerce and manufactures alone cannot keep up her prosperity, and her best men are endeavoring to solve the difficult problem of agricultural depression and unrest as now manifested within her borders. The day has passed when we can merely "drift along." Intellectual force of the highest character is needed to grapple with the great questions of production and distribution. The farmer of to-day has need for skill, intelligence and farming industry. It is true that men of small ability and little energy may drag out an existence and avoid starvation, for mother earth is very kind to her children and rewards liberally every small effort. But the excuse sometimes offered that an intelligent man must seek the city for the full development of his faculties need no longer be given. When this is realized we will retain in, as well as bring to, the country young men who feel within themselves a capacity for work, both physical and mental, and who will enjoy to the full the exhilaration of out-door life; of being in the fields under the broad canopy of heaven.

It is the fashion now, even among some who should be educators of the people, to belittle farming and farmers. They speak of "our rustic friend," or "our rural neighbor," or give would be witty sketches of "a countryman done for." Now it is true that we cannot expect in the busy laboring man all the graces of a Chesterfield or the superficial polish of a city drawing-room. But under the home-spun we may find a manly courageous heart, true native politeness, and an integrity and honor quite equal to the denizen of a city. Human nature is very much the same everywhere, but the finer polish of the city is sometimes at the expense of unselfishness. In fact, city and country are equally important parts of modern society. Let each recognize the worth and importance of the other and all will work together for good. H.

Montgomery Co., Md.

Our French Letter.

A Vine Congress.

Messrs. Editors American Farmer:

The vine congress held lately at Lyons, in connection with the phylloxera plague, has been very successful. The representatives of foreign wine-growing countries exchanged their vines with the sufferers, and also with those proprietors who have, if not conquered, at least well minimized the ravages of the insect. The cardinal points in discussion were the relative values of insecticides versus American stocks for grafting purposes. Testimony was produced of the efficacy of sulphuret of carbon and sulphocarbonate of potassium; and in applying these chemical destroyers it was urged to not only do so to the portions of the soil occupied by the diseased vine, but also to the other parts as well, so as to leave the phylloxera no point of refuge. A vote of the congress declared that the system of grafting French vines on imported American stocks was sound, as the latter resisted the attack of the bug, and due, according to M. Foëx, to a difference in the texture of the roots. M. Champin drew attention to the fact that nothing was more simple than grafting, but all the secret consisted in grafting well. Opinion agreed that all varieties of American stocks were not suited for grafting, and there was reason to suspect the "Clinton."

The harvest in the east of France has turned out deceptive when tested by the threshing machine. Ears were not well-filled and the grain is light. It is difficult to determine exactly if the yield of grain this year will be inferior to that of 1879. Farmers still suffer from a penury of forage, which in turn has reacted in the diminution of stock or the selling off same, in bad condition, at low prices. This state of things will for the future be avoided, as it has shown farmers the necessity of adopting a rotation of crops and the system of preserving green maize, &c., in trenches. The vintage is not satisfactory: In Beaujolais there will be no wine this season; in Languedoc there will be abundance, so widely do regions differ in production. If the total quantity be not inferior to that of last year, it will certainly surpass in quality. By the addition of sugar to the residual matters of the wine press, a fresh fermentation is induced, producing a thin wine, with a sharpish flavor, as its name implies—*piquette*. This is generally consumed on the premises, doing duty as small beer. But the French are in a fair way to compromise the reputation of their generous wines by largely manufacturing wine for commercial wants out of imported raisins.

Feeding Materials.

Belgian farmers complain of the high price of linseed cake for feeding purposes, and find fault with the substitutes, sesame, &c., as being too full of hairs, which, passing into the stomach, maintain irritation. Lupine seeds are becoming extensively employed in Germany as food for sheep. Rumors have been circulated that this aliment affected the health of the animals. M. Kühn has investigated the matter, and states that not only the health but the life of the animal may be compromised, as the seeds contain a dangerous alkaloid, producing jaundice. The toxical property can be destroyed by cooking the seeds or inducing fermentation, either in heaps or in trenches, of the forage, which neutralizes the noxious body. Efforts are being made for the cultivation of the oleaginous pea, *soja hispida*, so much in request in Japan and India. It is cultivated like haricots, in lines 6 by 20 inches, three seeds in a hole; soil to be rather dry than humid. It is cooked like ordinary peas. Sheep devour the pods and stems with avidity—the latter above all. It has entered into rotations in Austria since 1877. According to Haberland's analysis it is richer in nitrogenous and fatty matters than any other leguminous grain.

Utilization of Sewage.

Unpleasant attention has been drawn of late to the pestilential condition of the atmosphere

of Paris, caused by emanations from the sewers and chemical factories around the city. The system of sewers in the capital has been constructed for the reception solely of rain, flushing and scullery waters. Of late this arrangement has been abused by allowing the contents of water-closets to flow therein. The chemical works are devoted to the extraction of sulphate of ammonia from night soil; the vicinity of such factories cannot be very agreeable; the product, however, is in great request with agriculturists and sells at 20 sous per cwt. The ammoniacal liquor of the gas works is the next only source for preparing the sulphate. The subsoil of Paris is repulsively black, and markedly so in the neighborhood of the gas-pipes. Messrs. Chevreul & Deville assert, the odors from this black stuff, though not pleasant, are not noxious,—as the soil, being rich in sulphate of lime, converts the organic matter into sulphuret of calcium. Further, the empyreumatic matters produced by coal gas are eminently antiseptic. People are coming round to the opinion that the only way to get rid of the feculent matters is to discharge them over the immense waste lands at the mouth of the Seine, 150 miles distant from Paris, and let chemical factories and the tides do the rest.

Sugar in the Grape.

Dr. Muller-Thurgau has been devoting much attention, in laboratory and vineyard, to the production of sugar in the grape and the development of the roots of the vine. Under the influence of light and heat, the leaves form fecula or starch, at the expense of the carbonic acid of the air and water; this starch is changed into sugar, passes into the different organs to the roots, where it is changed into cellulose; the nitrogen for the latter is obtained from the ammonia and nitrates of the soil. The leaves produce the starch, which is changed into sugar; the latter permeates all the organs, and arriving in the grape remains there: it is the leaf then, not the berry, which produces the sugar; the cultivator ought then aim to encourage the production of starch, by inducing the development of leaves, where it is produced for deposition in the grape; hence, the practice of stripping prematurely the vine of its leaves ought to be abandoned. The leaves, too, ought to be well exposed to the light, as in obscurity they produce no starch; further, they consume what they possess. Grapes ought not to be exposed directly to the light, as such ever contain less of sugar; hence, the utility of preserving the leaves as a screen.

M. Philippar has made numerous analyses of Swedish turnips and mangold wurzel; he declares the former to be more nutritive and richer in nitrogen; he found varieties of that turnip to differ in richness, in the proportions of 1 to 4, and pronounces in favor of that called "champion."

Sprinkling the walls of dove and poultry cots daily, with water and the hand, effectually destroys the vermin, which live, move, and have their being, in the dry fissures.

Paris, October 9, 1880. F. C.

The exports from New York during the first week in October were 1,932 live cattle, 260 live sheep, 500 live hogs, 5,760 quarters of beef, 975 carcasses of mutton and 200 dressed pigs.

Managing a Flock.

A correspondent of the *Live-Stock Journal*, in one of a series of articles on feeding animals, gives the following on the management of sheep:

The mode of conducting a breeding flock for profit will vary according to locality and cost of food. Near the large eastern markets, and on land upon which sheep are kept as the best compensation for the food consumed, the ram lambs of the flock will principally be disposed of at a few months old, as affording better profit at this than at any subsequent period. The forty-pound fat lamb costs less in food than any forty pounds of growth added afterwards, and brings about three prices per pound. If, then, a flock of common ewes is being crossed with a pure-blood Southdown or Cotswold ram, for the purpose of laying the foundation and building up an inproved breeding flock, it will be profitable to keep only the ewe lambs—grade rams should never be kept for breeding, but grade ewes will be a great improvement over common ones when bred to a ram of the same blood as their sire. So, in grading up a flock towards a pure-blood mutton breed, about half of the lambs each year may be sold for the early market. Each generation will approximate nearer and nearer to the pure blood until they are practically equal for mutton or wool.

It will be seen that the expense of grading up this flock over that of common breeding is hardly worth considering; that, in fact, the ram or wether lambs marketed each year will be enhanced in value much more than the cost of the pure-blood ram over a common one. But while these ewe lambs are growing up to breeding age, the defective ones must be weeded out, and not permitted to breed. Only those of good form and prime feeders should be kept for breeding. The first requisite of a profitable animal is a good appetite and active digestion. A habitually mincing eater should always be discarded, whatever beauty of external form it may possess. No profit comes from a slow feeder. The breeding ewe, if she raises good lambs, must secrete a liberal quantity of milk, and this can only be done by a large consumption and digestion of food. The young ewes should not be bred before 14 to 16 months old; earlier breeding is not conducive to vigor of constitution. As the flock increases in numbers, greater care can constantly be given to selection of the ewes to be bred—breeding always from the best. The third cross will give ewes of $\frac{7}{8}$ pure blood, and this can be accomplished in four years; two years more would give 15-16 blood; so that six years would grade up common ewes to fifteen-sixteenths blood Southdown, Cotswold, or other pure blood. It is not, therefore, long to wait for a thoroughly-improved flock, which will practically give all the profit of the highest blood. Even the half and three-fourths blood usually feed about as well as the higher blood. After the fifth cross with pure-blood rams, or thirty-one-thirty-second part of the pure blood, the rams of this cross may be considered prepotent, and may be used for breeding—often even the

cross below this will be found prepotent as males. The English Short-horn Herd Book admits four crosses to record as Short-horns; and the same rule would hold with sheep. But we think breeding together grades of low degree tends to bring pure blood into discredit, and is unprofitable.

REGULARITY IN FEEDING.

All feeders who have studied the habits of the animals they feed, have discerned that they take special note of time, and are disappointed if the time is delayed only a few minutes. It is a cardinal point to observe regularity in time and quantity for feeding sheep. It has been observed that a careful and regular feeder will produce a better result with inferior food, given at equal times and in even quantity, than an irregular feeder as to time and quantity with the best quality of food. It is said that "the master's eye is worth two pair of hands," and it may as truly be said that "the shepherd's eye, which takes note of the individual wants of his flock, is worth a large amount of carelessly-given food."

The now venerable John Johnston, of Geneva, N. Y., to whom we have before alluded as a successful cattle feeder, has also been, under the old system, a successful sheep feeder. In a letter to the Hon. H. S. Randall, in 1862, he describes his common mode of winter feeding. Mr. Johnston was a very successful wheat and barley raiser upon a 300-acre clay-loam farm, completely tile-drained. He had large quantities of straw, and studied how to turn this into the largest quantity of manure. He says: I generally buy my sheep in October. Then I have a pasture to put them on, and they gain a good deal before winter sets in. I have generally put them in the yards about the 1st of December. For the last 23 years, I have fed straw the first two or two and a half months, a pound of oil-cake, meal, or grain, to each sheep. When I commence feeding hay, if it is good early-cut clover, I generally reduce the cake, meal or grain one-half; but that depends on the condition of the sheep. If they are not pretty fat, I continue the full feed of cake, meal, or grain, with their clover, and on both they fatten wonderfully fast. This year (1862-63) I fed buckwheat, a pound to each per day—half in the morning and half at 4 P. M.—with wheat and barley straw. I found the sheep gained a little over one pound each per week. It never was profitable for me to commence fattening lean sheep. Sheep should be tolerably fair mutton when yarded. I keep their yards and sheds well littered with straw.

Last year I only fed straw one month. I fed each sheep one pound of buckwheat. From the 20th of October to the first of March, they gained 1¼ lbs. each per week. They were Merinos—but not those with the large *cravats* around their necks. I have fed sheep for the Eastern markets for more than 30 years, and I always made a profit on them, except in 1841-42; I then fed at a loss; and it was a tight squeeze in 1860-61 to get their manure for profit. Some years I have made largely. Taking all together, it has been a good business for me.

This account of sheep feeding is on a different plan from the one we have been considering, of making it a systematic business—the feeder breeding his own sheep. But we give it to show what a careful feeder may do on a grain farm to keep up its fertility. Mr. Johnston's gains per week are small beside those we shall give of feeding the mutton breeds; but his results are remarkable, considering the fact that the sheep he bought were those of slow growth and late maturity. His success in winter feeding on that plan was largely owing to his custom of buying in October, and giving them good pasture for some two months. His straw feeding would also have been much less successful had he not fed oil-cake with it. The very nitrogenous oil-cake balanced the carbonaceous straw, and this oil-cake greatly enriched the manure.

The Steer for Beef.

A correspondent of the *Iowa Homestead* writes: The cattle breeder is, or should be, looking for not only the steer which will make the most beef in the shortest time, but the beef which will return the greatest profit. They have worn their teeth and wearied their jaws long enough in masticating the tough and tasteless tissues of a muscular system. And there has been in the last year a more thorough investigation of this question than at any former period of our history. Disappointments were encountered in some calculations, which at first were not well understood. Those raising stock in Texas, Oregon, or on our Western plains, supposed if they graded up their stock with Short-horns, Devons, or Herefords, they could produce as sweet, tender and delicious beef as we could in Iowa, Illinois, or Ohio. And why not? Why is not a work ox, when thoroughly fattened, as finely marbled, tender and juicy beef, as the steer which has been permitted to leisurely crop the tender grass in the rich pastures, and drink his water from the spring brook which constantly flows at his feet? The labor and constant exercise of the ox enlarges the muscle, and prevents the adipose matter or fat from accumulating in the cellular tissue. The beef of the work ox is considered of an inferior quality, for the reason that it is made up principally of muscular development, and is of little use on the table, as in cooking it will cook dry and curl up, and will produce an abundance of whit leather.

The steers raised on the plains, or in Texas or Oregon, before they reach the Chicago and eastern market are veritable work oxen—Though they may not bear the yoke, yet from their calfhood they have been used to daily marches for food and water, and been compelled to seek the foot-hills or even the sides of the mountains for pasture, where there is no water. All this is great against the character of the beef, and it is useless to expect even the high grade steer of the plains, even if they had the same quality of sweet grasses, to be first-class beef. And the Oregon steer, when he arrives at the Missouri river, has performed a drudgery and servitude that has made his flesh hard and leathery, there being no more marbling in his flesh than in that of the workhorse, the gray hound or the antelope. There are now, it is stated, 23,800 head of Oregon steers slowly

wending their way over the mountains and deserts. This fall they expect to reach the Yellowstone valley, where they will winter. Next spring they will be driven to some point west of Cheyenne on the Union Pacific railroad, and shipped to our grain fields to be fattened up for market. And some have vainly imagined that these can with care be made first-class beef. At first butchers and shippers bought liberally of them, supposing if they were high-grades and were round and plump in form they were an article equal to the best. But experience has proven that they were of the same class of beef as work oxen. The same is the case with Texas cattle, after their long drive, and the other cattle on our plains where pasture and water require much daily labor of the stock to partake of both. They are all work oxen. But recently has this been so clearly demonstrated. Formerly they raised only the worst class of scrubs. The past few years large numbers of the better class of bulls have been used, and they expected their grade steers to compare favorably with our choicest ones.

Besides, water is one of the important elements, not only in the rapid development of beef, but in producing the choice qualities.—Water must be pure, cool, and plentiful, and of easy access.

We do not wish to be understood as taking the position that there is no difference in the quality, naturally, between the well-bred animal and the Texan or Iowa scrub. Far from it.—But our position is that a steer which has to labor, to travel, to be deprived of water for long seasons, etc., is not, and cannot be, equal in the choice quality of his beef to the steer which has had plentifully the choicest food and reposed quietly by the side of the running brook.

Care of Horses' Hoofs.

Lack of moisture is not necessarily a cause of brittleness of the hoof, since the horses of the desert have the strongest hoofs in the world, in spite of the excessive dryness. A continued drought is especially dangerous when it acts on a foot accustomed to abundance of water.—Under the action of water the horn cells absorb, increase in size, and push each other apart. By this action, too, some of the gelatinous matter that builds up the horn is dissolved out, and when the hoof is again allowed to dry it has lost materially in its power of cohesion. The more frequently the process of soaking and drying is repeated, the more hurtful it proves to the hoof, which becomes increasingly brittle and liable to split up and break off. If, further, this tendency to brittleness has been inbred through generations of horses kept in climates where the feet are alternately soaked by drenching rains and withered by drying suns, the danger is proportionately increased, and the feet of such a race of horses are especially liable to splitting and injury. It is not habitual dryness that injures; it is the alternations of rain and drought. While upon this subject it may be well to note that the evil effects of moisture may be largely warded off by smearing the moistened foot with impervious olly agents before exposing it to the drying process. In this way the moisture that has been absorbed by the horn is retained, the sudden drying and shrinking are obviated, and the horn remains elastic and comparatively tough. As it is often needful to soak the foot in warm or cold water, or in poultices in cases of disease, it is all important that the above-named precaution should be constantly borne in mind, and that the softened foot should be smeared throughout with some hoof ointment before it is allowed to dry and harden. For this purpose nothing is simpler nor better than a mixture in equal parts of wood tar, and whale oil or lard. This may be smeared on the foot every other day.

In addition to the changes of weather, the frequent standing in rotting dung-heaps or the pools of decomposing liquid manure, may be named as causes of brittle hoofs. In the dung heap there is not only moisture and steam soaking and softening the hoof, but there is abundance of ammonia gas, which is especially calculated to soften, dissolve and destroy the horn. Rotten manure and putrid liquors, therefore, are much more injurious than pure water, muddy pools, or wet clay. Again, the emanations of this kind are far from conducive to general health, so that they prove hurtful in two ways—first, by directly destroying the substance of the hoof, and second, by reducing the animal vigor, the power of digestion and assimilation, and the power of secreting good horn. Standing in such decomposing organic matter is still more injurious, however, when the animal is confined to a stall or box, for here the injurious effect of inactivity is added to the above-named conditions.—*Ex.*

Fattening an Old Cow in Milk.

To a correspondent who wants to know how he shall fatten an old cow that is hard to dry up, the *National Live Stock Journal* replies:

The only profitable way to fatten such a cow is to feed her as if you were in earnest in fattening her, and take all the milk she is willing to give you. If you propose to dry her off before commencing the fattening process, we should advise you to take the shorter and more profitable course, and that is to take her hide off—for her hide is worth more than she will be worth after she is fattened, provided you first deduct the cost of fattening her. In other words, an old cow will eat, while fattening, more than she will be worth. But an old cow, that has been a good milker and is hard to dry up, will give milk enough whilst she is fattening to pay the whole cost of her food, and thus she will fatten herself free of expense.

In this case, the feeder will be pleased to see the faithful old cow eat, and will be in no great hurry to get her ready for the butcher. It takes time to feed up an old animal, and will take a little longer to fatten her when giving milk, but time is now of no particular consequence, for she pays for all she eats.

We have tried this experiment many times upon cows that had been so good that we were loth to part with them at 12 years old—an age which few cows are profitable to pass—and we never failed to make them good beef in four to

eight months, and those that were fed eight months were quite as profitable as those fed four. Their milk always a little more than paid for their food, and sometimes a good deal more. We have fattened cows at 16 to 19 years old, and made them weigh 100 to 250 pounds more than their ordinary weight at seven years old.

If the old cow is quite thin and skinny, as she is very likely to be, she should not be plied strongly with corn meal on the start. This is apt to make her feverish and to induce a state opposed to thrifty fattening; besides this feverish state will render her milk gargety. Give her slightly loosening and cooling food at first, such as pumpkins, potatoes, sweet apples, succulent rowen grass, one or two pounds of oil meal, cheap molasses and clover hay, or, better, green clover; and with any of these may be given, on the start, one or two quarts of corn meal per day. The food must be gradually increased. A pint to three pints of cheap molasses, diluted with three parts water, and mixed with one-half bushel of cut clover hay, will keep the stomach and bowels in excellent condition when beginning the corn meal. And all these foods will make prime milk.

Another food that will be found successful, and in many places cheap, is one bushel of flaxseed ground with 15 bushels of corn. This flaxseed will render the corn meal just laxative enough for health, and the flaxseed is worth, as a food, all it usually costs. Cotton seed meal may also be fed to advantage up to three pounds per day. Linseed meal, made by the new process, is excellent to feed with corn meal, as it has a large proprtion of nitrogen, and thus balances the corn meal; but two pounds per day is sufficient of this.

The principal grain food may properly be corn meal, which is usually cheaper for fattening than any other grain. Bran and corn meal go well together for feeding an old cow, and after the cow gets accustomed to the use of the grain you may feed her six quarts of bran and six quarts of corn meal in three feeds per day. It is always better to begin feeding her on pasture, beginning the use of grain lightly, as mentioned, and increasing, little by little, up to her capacity. If the cow be young that you desire to get rid of because she is too small a milker, you may be surprised at her sudden improvement in milk when you try fattening her on the plan suggested. Many dairymen do not know the capacity of their cows to give milk, because they have never fairly tested it by full feeding.

It appears from French statistics that France imported in the first four months of the present year 87,000 head of horned cattle, 575,000 sheep and 95,000 pigs. Of this number only 131 oxen, 1,405 sheep and 25 pigs came from this continent. These figures will give some idea of the vastness of the European demand for meat, outside of the English. Doubtless the consumption of meat in France would be greatly increased if the article were supplied of better quality and at a cheaper rate than now prevails.

The Poultry Yard.

By G. O. Brown, Montvue Poultry Yards, Brooklandville, Md.

November Chat.

This is a very trying month on the poultry stock. Sudden changes of the weather, if the fowls are roosting in draughts or exposed situations, is quite sure to induce that dreaded disease, roup, to appear. If the hen-house has not already been made proof against draughts, all the cracks properly buttoned, attend to it at once; "delays are dangerous." Should any of the birds appear droopy, and show any running at the nostrils, isolate them from the others immediately; or in drinking from the same vessel of water the disease will spread throughout your entire flock, and may prove a fatal epidemic among them. If road-dust has not been secured already, get some as soon as convenient—take advantage of the Indian summer, which generally occurs this month, for judging from all "signs" and indications the approaching winter promises to be an unusually severe one, and the dust will be found to be a good thing to have for their dust-bath—when mother earth is clad in snow or the ground is frozen. If you have not or will not have on hand a supply of crushed oyster-shells, secure now fine gravel, *get it dry* and put away in barrels. Oyster-shells are preferable, as they not only serve the same purpose as gravel, but also furnish lime in its *natural* state, which makes the egg-shell and furnishes some nutriment that seems quite essential to health. Those that are situated where oyster-shells are plenty, can furnish, or rather manufacture, their own crushed oyster-shells, by mashing them on a large stone or iron with a hammer. There are, however, men that make a business of crushing oyster-shells by machinery for the exclusive use of poultry. Do not forget to lay in a goodly store of leaves,—they can be tramped down in barrels or other suitable places, and will be found invaluable during the winter. The cabbages, whether headed well or not, should be pulled up, and inverted so the roots will be up and heads down; place these in rows and cover with dirt, having a slope so as to shed rain. They will keep in this way, and always be in excellent condition, either for the table or for the fowls to pick. Extra attention *now*, with a liberal diet, having the food varied as much as possible, will get the fowls in good condition for winter; and when thus, you can expect eggs even during January and February. Birds half taken care of will only be an expense the entire winter and will not lay. About now will be the proper season to reselect from your flocks such birds as you do not care to winter over, and place them in a yard by themselves, and with extra feeding get them in thanksgiving-day order. The chicks have now matured sufficiently so that the best can be easily recognized, and those that it is desired to keep will thrive better if by themselves, not crowded. If so situated that the sexes can be kept separate until January, it will be of advantage to have them apart. Keep fresh water before the fowls; do not think because the warm weather is gone

they do not need much water. Plenty of pure fresh water is always relished by poultry, and it is very essential, at all times, in promoting health.

A Word to Farmers.

There is no branch of the poultry business that pays a better profit for the money invested than raising thorough-bred stock for breeding purposes, and there is no one who has so good an opportunity to carry on the business successfully and with so small an outlay of money, as the farmer. There are many farmers in this country who have made fortunes raising and selling thorough-bred horses, cattle, sheep, swine and poultry, while their neighbors have barely secured a living raising common stock and grain.

For the last twenty-five years there has been a good demand and ready sale for all kinds of valuable thorough-bred stock at most generous prices, and good specimens of pure-bred poultry have certainly shared in the general favor to an extent almost beyond credit, $100, $150 and $200 having been paid for pairs of fi ely marked and symmetrically formed fowls. Thousands of fowls have changed hands at from fifteen to fifty dollars each, for exhibition or breeding purposes, and there is every indication that the demand is constantly increasing.

Many men who have not the means to start them in breeding thorough-bred cattle, sheep, or swine, can make a good commencement with thorough-bred poultry. The cost of good stock to start with will not be great, the expense of keeping small, the increase rapid, and the profits large when good judgment is used in selecting and mating, and proper care and attention is given the business. There are thousands of young men who look upon the labors of the farm as drudgery, and are seeking for other and easier employment. We advise such young men, as well as the contented farmer, to undertake breeding some one breed of pure-bred fowls, with a view to producing good stock that will bring round prices for breeding purposes. The business is certainly a pleasant one, and will be profitable if studiously managed. In starting the business it is important that *good stock*, of whatever breed one selects, be purchased for a foundation, as both time and money will be saved in the end. Poor stock will produce only inferior progeny, while good reliable stock in the beginning will furnish valuable fowls the first season.—*American Poultry Yard.*

Which Pays Best?

Many persons of limited experience, judging only from the great difference in price, suppose that pure and fancy-bred fowls are only desired for the gratification of a whim of the poultry fancier to possess handsome fowls, and not from any considerations of profit. There cannot be a greater mistake, for it has been thoroughly settled in the minds of those who have had even a limited experience, that even a cross of the pure breeds with the common fowl will bring about wonderful results in the way of improvement in egg production and size of the birds at maturity. Those who give their attention to the improved breeds alone of poultry are too often misunderstood; as in many cases, where people devote themselves to some special pursuit, the poultry fanciers are regarded as mere enthusiasts, who simply amuse themselves without conferring any benefit on the public. This is a grave error, which does great injustice to them, for farmers especially owe much to poultry fanciers. They have worked, and are still working hard, to demonstrate that it costs no more to keep good fowls than poor ones. After getting a fair start, few pure-bred fowls will more than pay the seemingly extravagant price given grudgingly for them, simply by the extra number of eggs they give. Besides this, a Brahma fowl will dress for market or table, and be more than twice as heavy as one of the common kind. Then the eggs are larger, and of a richer, firmer flavor. These results are from the labor of poultry fanciers, and if farmers would only look with a little more favor upon them, and appreciate their efforts toward improvement, their eyes would soon be opened to the fact that their poultry was about the best paying stock on the farm.—*American Stockman.*

A Chance for Women.

Many women of moderate means have found it more difficult, in these last hard years, to get a living than the men even. If this paper should fall under the eye of any such, we say to them—try poultry keeping. The first outlay need not be large, and the occupation is just suited to women. *Gentleness* is more needed than *strength*, and the first quality is essentially woman's.

In many parts of the country women are very successful as gardeners or florists, and taking the risks of precarious weather, wet and dry seasons, etc., the poultry business stands in advance of either of those occupations. Eggs will always sell, and a fine fat chick is always wanted. If it is possible, keep some distinct breed, as the keeping costs no more and the margins of profit are larger, when choice fowls take the place of a lot of riffraff stock.—*American Poultry Yard.*

To Keep Wagon-Tires on the Wheel.

A practical mechanic suggests a method of so putting tires on wagons that they will not get loose and require resetting. He says he ironed a wagon some years ago for his own use, and before putting on the tires he filled the felloes with linseed oil, and the tires have worn out and were never loose. This method is as follows: He used a long cast-iron heater made for the purpose; the oil is brought to a boiling heat, the wheel is placed on a stick, so as to hang in the oil, each felloe an hour. The timber should be dry, as green timber will not take oil. Care should be taken that the oil is not made hotter than a boiling heat, or the timber will be burned. Timber filled with oil is not susceptible of injury by water, and is rendered much more durable by this process.—*Factory and Farm.*

Do Fertilizers Last?

The editor of the *New England Farmer* thus discourses on this question:

The question is often asked by those who have had but little experience in the use of commercial fertilizers for growing farm crops, "do they last like barn manure?" Now, before answering this question, we should be inclined, Yankee-like, to ask another, which is, how long do barn manures last? Barn manure is talked of as a standard for measuring the value of commercial fertilizers, but to us it seems a very imperfect and uncertain standard. The manure from horses, cattle, hogs, sheep and poultry, is all classed as barn manure, while they vary greatly in value, not only on account of the difference in the character of the animals, but also because the manure from each class of animals varies very much in value according as they are fed well or poorly, are idle or working, or are young or old. Then barn manure, as we find it, varies in value according to the manner in which it is saved and kept. If the liquid is all retained, if the whole is kept under cover till used, and not allowed to heat and waste by excessive decomposition, that is one thing. If it is exposed to the weather so that the soluble portions are washed away beyond recovery, if the liquid portions are allowed to soak down into the subsoil under the stable floor, that is quite another.

The fact is, stable manure is so far from being uniform in quality and character that it is very far from being a true standard for measuring values in commercial fertilizers. Old, well-rotted horse manure, made from grain-fed animals, is very quick in its action when made fine and used as a top-dressing upon mowing lands just after the crop is removed. Coarse cow manure made from bog hay, and then thrown out at a stable window to dry into hard lumps, would be a very slow and a very *lasting* substance applied upon mowing fields and left on the surface without pulverizing, but its lasting qualities would be much more apparent in the lumps of manure itself than in the increased growth of the crop. Raw, coarse bone is a lasting manure when spread on the top of a dry pasture, while finely ground, dissolved bone acts quickly, if properly applied.

Fertilizers, like manures, last long, or act quickly, according as they are in condition to be *used by the plants*, and according as the plants are in condition to use them. We have spread commercial manures on grass land after haying, and have had the rowen crop greatly improved in consequence; but from several experiments and much observation we have come to the conclusion that it does not pay, as a rule, to top-dress with quick-acting manures, especially for a rowen crop. The grass plants in the latter half of the season are not in condition to appropriate fertilizers as they are in early summer. It is not their nature to make a heavy growth of stems in the fall, and without height it is impossible to get very heavy crops.

Our practice now is to apply grass top-dressing fertilizer only in the spring, when a full return may be expected, and to apply only about what it is supposed the grass plants can appropriate during the early portion of the summer. Of course we refer to the use of the popular soluble fertilizers, such as are prepared specially for grass, like the Stockbridge, Bradley and Darling grass fertilizers. These all contain nitrate of soda, sulphate of ammonia, dried blood, dissolved bone or other quick-acting ingredients. Such preparations are not considered very lasting, but from the experience of the present summer we are inclined to believe that they will, ordinarily, if properly applied, last till they are appropriated by the plants, and that, it seems to us, is all one can reasonably ask.

Last spring just as the grass was getting quite green, we applied top-dressing fertilizer at the rate of ten dollars worth per acre to nearly every acre that we intended to mow. After applying it there was almost no rain at all till hay time, and only on the moist portions did the fertilizer seem to pay for the application. On the dry knolls the grass dried up and was little if any better for the fertilizer, while on the good grass land the applications paid well, even better than in ordinary years, because the price of hay is carried up several dollars per ton, on account of the drought. After haying the rain came, and early in August there was a second crop ready to mow; and we have observed, what is very unusual, that the heaviest grass is frequently on the dry knolls. This shows not only that the application on the moist land was well used up by the first crop, but that the fertilizer spread on the dry knolls was not lost or wholly wasted, although the return could not be equal to what it would have been had there been rain enough to make the fertilizer available to the plants in the proper season for their growth.

Agricultural chemists teach us that nitrates, when applied to farm lands, are liable, unless used up by plants, to change their forms or in some way become practically unavailable as plant food. They also teach us that they are very diffusable and easily washed through the soil by heavy rains. If these statements are true, it follows that their application should be so timed and their quantity so regulated that the growing crop can appropriate them while they are within reach and in an available form. The conclusion then is, apply quick-acting fertilizers only in such quantities as it is expected the present crop can appropriate, and not to apply them very long in advance of the growing season.

If commercial fertilizers can be so prepared and applied that there shall be no waste, but all their fertilizing elements appropriated by the crops, then we care not if it is found necessary to apply them little and often. The labor of spreading is, perhaps, somewhat greater where a ton is applied at two or three different times, but if purchased only about as fast as used, the saving of interest on investment will fully offset this item.

At present we are inclined to expect that all the first-class popular fertilizers will pay for themselves the first year, if properly used and the season is favorable. If effects are visible in after years, it is looked upon as so much clear profit.

Deodorizers vs. Absorbents.

The importance of questions bearing on the subject of health is now attracting very general attention, and is becoming a national question,—our own government having taken hold of it by the establishment of a Bureau of Health, with its ramifications, throughout the country, and our Paris correspondent indicates a similar lively interest in France. The *Boston Cultivator*, in some excellent ideas upon this branch of hygeia at the head of this paragraph, remarks that it does not follow that because fresh earth will absorb offensive odors and germs of disease that it always destroys them, for it has been found that when animals have been buried which have died of infectious diseases, in living animals, which have been inoculated with the earth taken from immediately above and below the buried bodies, similar diseases have been produced. Animals and men, dying of malignant, infectious diseases, should be buried so deep in the earth that danger from opening of the ground may be avoided. It has generally been supposed that gypsum would decompose carbonate of ammonia, and yet we think there is no proof of this; but we have no doubt it will absorb it and prevent its escape into the atmosphere. Let us use due caution in this connection, and not mistake absorption for disinfection or decomposition. The earth is a great filterer, and water loaded with foreign matter in passing through the fresh earth becomes purified; but, notwithstanding this, the earth does, under certain circumstances, allow impure matter to filter through into wells. When the earth has been filled with this impure matter to repletion, it then allows it to pass into the wells unpurified; and wells situated at a distance from privies and stables, which for years have been uncontaminated by them, are yet found all at once to be impregnated with unmistakable odors of both or either kinds of filth. When the earth through which these have to filter becomes fully impregnated with these odors, it loses its purifying power and becomes totally useless as an absorbent.

Lime has been used as a purifier, and no doubt it is wonderfully efficient in removing elements which might absorb and retain disease, and would destroy the germs of disease which might cling to or have been absorbed by the dirt and dust of the walls and partitions of the rooms, but to disinfect is to destroy the vitality of the germs of disease.

Acid and alkalies should never come in contact with manures, unless they are going to be immediately buried in the soil, and even then they may produce combinations prejudicial rather than beneficial to vegetation. Common salt might also liberate gases and produce combinanations undesirable in manure.

Sulphate of iron has been recommended as a deodorizer upon the supposition that it would decompose when it came in contact with carbonate of ammonia and form sulphate of ammonia, an excellent fertilizer and without odor; but we have no proof that it does this. In fact, carbonate of ammonia does not produce an offensive smell, and sulphate of iron would be as likely in its decomposition to liberate offensive odors as to destroy them. Whatever beneficial effects sulphate of iron might have in the sink, drains, etc., a weak solution of sulphuric acid would accomplish the same effect, besides acting much quicker, but carbolic acid would be equally as efficacious. Sulphate of lime, as we have before stated, is, so far as we can speak confidently, more efficacious as an absorbent than as what has been termed a fixer of ammonia. Kiln-dried sawdust from all kinds of wood is one of the best absorbents of liquid manures which can be used in stables, because it takes up such a large quantity before it becomes fully saturated, but, as it has a great tendency to fire-fang, it should be frequently applied to the soil by spreading. The heating of manure expels the ammonia, which is its most valuable part. Sawdust not kiln-dried is a good absorbent, but not to the extent of kiln-dried. If well dried in the sun and stored in a dry place it would be a good absorbent. In using sulphate of lime in the stable we should prefer the prepared in preference to the land plaster; it costs more but is a much better absorbent.

Agricultural Improvement in South Carolina.

In none of the States does there seem to be more progress making in farming than in South Carolina, and reports made to the State Agricultural Society show that this is not in isolated localities only, but general in its reach. In a communication to the Marion *Merchant and Farmer*, we find the following report from Marlborough and Marion counties:

Your correspondent, in company with three practical and experienced planters, left Little Rock—the centre of the El Dorado farming-belt of South Carolina—on the morning of the 26th instant, for a three days jaunt amongst the farms and farmers of Marlborough and Marion. Their pathway lay by the well-known Donahue plantation of Chancellor Johnson, which this year is 20 per cent. above the average, through Hebron, which is better, to Bennettsville, and thence to the Steed indigo plantation, six miles south of Cheraw, and returning through the Burnt factory—Adamsville and Clio sections—to the place of starting.

The push, energy, progress, prosperity and general development of the country, is without a parallel. The crops of cotton, corn, peas, potatoes, cane, clover, &c., are wonderful to behold, never having been known to be better. Where wheat and oats were grown, the land is now covered with peas. Buildings are going up on almost every farm; dwellings after the most improved and modern styles, gin-houses, barns and stables. We passed over twenty steam engines, besides several water-powers, equal, each one of them, to a half dozen engines. A boom of prosperity seems to have taken hold of the whole community. Farmer and laborer, merchant and trader, and all classes and professions, are pushing forward on the upper grade.

If the same perseverance, energy and push is displayed for the next ten years as has been shown in the ten just past, their progress and development will be simply wonderful. All classes are working harmoniously, and their united efforts for financial success is plainly visible on all sides.

Want of space will permit me to mention only a few of the large number of farms passed and inspected, Chancellor Johnson's Donahue plantatation, managed by Mr. Gibson, with over 800 acres under cultivation, and his Brushy Bay, managed by Mr. Webster, with over 450 acres cultivated, being the largest, in the finest condition, and with better prospects for the largest yield ever known before; Jas. B. Breeden, "King," with his several places, aggregating as much or perhaps a greater number of acres than the Chancellor. On one of his plantations, the "McCallum" place, is a cotton field of 250 acres, perfectly level, without a stump or tree, the cotton averaging 4½ feet high, and loaded with bolls and fruit. Col. C. S. McCall, the popular senator from Marlborough, has 639 acres in cotton on his two plantations, on both sides of Crooked Creek, and 400 in corn; the whole under the superintendence of his brother, T. D. McCall, who is considered the most successful manager in the two counties; the cotton on those places is above the average. William D., George and William A. Crossland each have immense plantations, every acre of open land under cultivation, and as good as the best. Col. C. W. Dudley and his son, Capt. Thos. E. Dudley, bids fair to be as successful as planters as they have been as lawyers. Col. W. H. Steed's "Irby Place," though late and somewhat behind those mentioned above, as far as his cotton is concerned, seemed to be booming; his corn—the celebrated Indigo field, immediately on the banks of the great Pee Dee river, containing 60 acres—it was estimated would yield an average of fifty bushels to the acre. Capt. C. M. Weatherly, the popular and efficient clerk of the court, has cotton that cannot be surpassed on his beautiful farm, two miles west of the village. He is successful as a planter, as well as an efficient and faithful officer. Wm. K. Breeden, on the well-known plantation formerly owned by Col. T. C. Weatherly, has broad fields well cultivated, and the equal of the best that was seen.

A correspondent of the *American Farmer* from Marion county says that in Eastern South Carolina improved farming is carried on to a higher extent than in any portion of the State, or, perhaps, anywhere else in the cotton belt, and adds:

The crops of cotton grown in the upper part of Marion and in Marlborough are about double what they were in 1860, and the cotton crops are gathered with free labor in little more than half the time they were with slave labor, though they are much larger. This arises from the fact that the freedmen are paid so much per hundred pounds for picking it out, and the young ones, the old ones and many of the house servants are taken into the fields in the fall months.

Destruction of Birds of Prey.

"Out of the frying-pan into the fire," is a quaint old saying that is as often applicable to the wisdom of nations as to that of individuals. Men who get one idea into their heads and start out to build some great and imposing structure with such a limited capital, or attempt to regulate some natural law which they imagine is not quite as it should be, usually find that they have made a miscalculation somewhere, and their schemes, for some unaccountable reason, do not work quite satisfactorily to themselves or anyone else. In Europe, as well as in America, the birds of prey (*Raptores*) have been generally considered as enemies of the farmer and gardener, on account of their well-known habit of catching the small insectivorous species, as well as in the case of hawks and owls destroying domestic fowls. But of late I notice that the ornithologists of Great Britain are again discussing the "Wild Birds Protection Act" very thoroughly, and the claim that it is a great mistake to exclude the "prey-catchers" and afford them no protection, and class them among the enemies of the husbandman, because the hawks, owls and other raptores not only destroy mice, moles, rats and other vermin that feed on grain, but they also catch and devour thousands of sparrows and other granivorous birds. A correspondent of *Land and Water*, in referring to this subject, says:

"The game-keeper, in his gross ignorance, believes that hawks, in gaining their legitimate living, prefer game to other food, as though they knew of the arbitrary distinction made only by the law of man; and this is his sole reason for destroying them, because, perchance, they may kill a few of his young pheasants and partridges, which he is rearing only to be slaughtered by the degenerating battue system."

The above remarks are just as applicable to the farmers of this country as to the ignorant game-keepers in England; for the owls, hawks, and other birds of prey are looked upon as enemies to be shot on sight, or trapped whenever an opportunity presents. It is no wonder that the fields are overrun with mice, and hundreds of thousands of fruit trees are annually girdled and destroyed by these pests, whose natural enemies have been driven away or killed. Better keep the chickens and turkeys in a secure lath-covered yard until they are too large to be caught by hawks, than to kill off all the birds of prey.

The crow and blackbird, although not classed among the birds of prey by ornithologists, are considered as such by our farmers, and pursued with as much vindictiveness, because both are sometimes caught stealing a few grains of corn, and the former is known to be fond of eggs, and is not at all particular in regard to their kind, whether it be those of the duck, hen, or those of some wild bird of the field or forest. But with all their faults there can be little doubt that they do far more good than harm, in destroying many millions of noxious insects. Only give the crow half a chance and he is the best insect collector known, and there is scarcely anything of the kind that comes amiss, for he has a voracious appetite and a good digestion, and I have known

a young half-fledged crow to devour a hundred rose-beetles for breakfast, without appearing to be at all uncomfortable afterwards, or lose his appetite for a good dinner of the same.—*A. S. Fuller, in American Entomologist.*

Pumpkins and Apples for Stock.

Messrs. Editors American Farmer:

That these two products, judiciously fed to swine or other farm stock, are valuable, conducing to health, improved condition, with increased product of milk in the case of milch cows, as well as fattening to all horned stock and swine, is proved by experience—not only my own, but that of others; and that the seeds do not cause excessive staling is also a fact of experience, even when fed raw in considerable quantities. I have found raw pumpkins and also green or ripe apples fed to cows giving milk to increase the flow, as well as the butter product, and that the cows did not stale more than usual, apparently. I am aware that many writers do not agree with me here; but my experience and observation justify the above facts. I am led to record the above from reading the following in the *American Agriculturist's* (of 1847,) editorial, A. B. Allen, editor: "The English editor of Boussagault's Rural Economy asserts that Americans say 'a hog will die upon pumpkins and apples alone, but he will live and fatten on a mixture of the two.'" This is the only place we ever met with the above observation; yet, so far as our experience extends, we know it to be incorrect. We have kept swine of various ages for weeks exclusively on pumpkins, and never knew them to do better; and that they will not only live and thrive on apples alone is notorious the country over. We once shut up a lot of Berkshires of various ages in a tight pen, with a plank floor, and commenced feeding them on raw pumpkins. As our neighbors dropped in from time to time they would look at the grunters, shake their heads, and declare if we did not take the seeds of the pumpkins away they would cause the swine to stale so exceedingly as to make them skeleton poor in three weeks. We had great faith in our breed, and so let them continue to eat the seeds and all for upwards of six weeks. During this time they had nothing else that we recollect but water, of which they drank very sparingly. They throve finely during the time, nor did they stale much more than common. Indeed, so well were we satisfied with their condition at the end of this period that we should have continued them on the same food as much longer had not the pumpkins been all consumed. With a poor breed of hogs we have no doubt but pumpkin seeds may be the immediate cause of diabetes. Yet even for these, if the pumpkins be boiled or steamed, we do not believe any harm will come from their eating the seeds; on the contrary, we have no doubt they would prove highly nutritious.

In my younger days I recollect of my ancestors boiling pumpkins and feeding to hogs to give them a start in the fall, and they throve exceedingly on them; but usually the dish-water, &c., found their way to the swill-tub, thinning the mess; later on small potatoes were added to the pumpkins and boiled, the pumpkin seeds never being removed. At the close of fattening the same feed was continued, with the addition of bran or corn meal—perhaps both; resulting usually with sweet good pork, much better than is usual at the present day.

Worcester Co., Mass. W. H. WHITE.

Jerseys and Their Butter.

A good Jersey cow will sell to-day for two hundred dollars, where a good native will bring fifty. Four hundred, six hundred, or one thousand dollars, is frequently paid for a Jersey, combining, with some fancy points or very famous strain of blood, a good butter yield; but leaving out fancy color and noted pedigree, a good registered Jersey cow will to-day bring at least four times the price of a good native.

Why is it that a cow very much under the average size of a good beefing animal, and with very few of the meat or milk points which farmers are wont to admire, has come to outrank the native four or five to one, and to stand on an equality with any thoroughbred in the world? It is because the Jersey is *the most profitable producer of the best butter* that the following claims are to-day admitted by those who have most fairly and thoroughly investigated the merits of this breed:

1. The Jersey is a thoroughbred, and possesses as fully as any the thoroughbred's capacity to respond to feed beyond the amount required for the daily repairs of the wastes of the body, and will make this extra return in butter as surely as the Short-horn will make it in beef, or the Ayrshire in milk.

2. The Jersey, being thoroughbred, can be depended upon to transmit, in breeding, in most cases, the good qualities of one parent, in many cases those of both parents, and very often the best qualities of remote as well as immediate ancestors.

3. The Jersey produces the best butter. The butter globule has a larger average size in Jersey milk than in that of any other breed, and in consequence of this larger globule the cream rises quicker, and hence is exposed a much shorter time to the air, and injury from fermentation, odors and dust, and requires in deep setting the use of fewer tins and less ice and labor.

The larger globule has a thinner envelope, and consequently churns quicker than the cream of other breeds, and is better adapted to all varieties of churns.

The larger size of the globule gives a better texture of grain to Jersey butter than that of any other breed.

The color of Jersey butter is better the year round, and on all kinds of food, than that of any other breed except the Guernsey; and though the Guernsey equals the Jersey in this respect, it falls far behind in that more important element—texture or grain. The butter of these two breeds has not only a higher color, but a more sprightly flavor than that of any other.

4. The Jersey makes more butter in proportion to her size and feed; having a smaller body she has just so much less to build up in youth, and to support and repair day by day.

5. The Jerseys "come in" at 20 to 22 months, thus making a saving over most other breeds of a year of food, handling and protection.

6. The Jersey, as a rule, "goes dry" a shorter period than any other breed, two months being over the average period, and many produce butter and calves without drying off.

7. The Jersey gives more butter in her milk in proportion to the other elements; thus making, in particular, a great saving in the amount of water to be milked from the bag, to be carried to the milk-room and to be provided with pan room. This makes no small saving of time, labor and material in the course of a year.

8. The Jersey will stand more corn and other winter grain feeding without getting fat; she will put the oil into her bag rather than into the carcass. This is a point of great importance in these modern days of all-the-year-round butter-making.

9. The Jersey will make a cream cheese of the highest quality in texture, flavor, solubility and body. And they make beef of perfectly good color, grain and flavor. They will make, of course, but a medium quantity of beef; but as the bulls, when well handled, remain gentle* to a great age, and will always be in demand for use upon natives as well as grade and registered Jerseys, and as the Jersey cows come into profit early, bear calves frequently and regularly, and are long-lived, it is seldom that this breed will find its way to the shambles.

10. The Jersey has shown herself as well-fitted to thrive in all climates and upon all kinds of food as any breed, and some she surpasses. She has hereditary thoroughbred tendencies which entitle her to the favor of scientific breeders; the quality and amount of her butter yield are placing her highest in the estimation of butter-makers, and the beauty of her "points" and coloring will always make her unrivalled in English parks and American lawns.

Three-quarters of the highest-priced butter used in New York and New England to-day is made from Jersey cows; it brings from 40 to 80 cts. ℔ lb., and the demand is greater than the supply. The bulk of the butter dealers do not handle this, and it is not known to the newspaper market reports. As a rule it goes once or twice a week directly from the dairy where it is made to the dwelling-house, or club, or hotel, in which it is eaten; it has less than one-quarter of an ounce of salt to the pound, and thus none of the finer and more aromatic odors are lost. It is made from the milk of healthy Jersey cows, who eat only the sweetest food, drink the purest water, and breathe the cleanest air; are carded and brushed and carefully bedded, and are always treated with gentleness. It is made from milk which is immediately removed from the stable, though the stable is daily sprinkled with gypsum, and has no manure cellar under or near it; it is made from cream which has risen in less than 36 hours, in clean tins, and a clean atmosphere; it is granulated and brined, or washed in the churn, and worked with the greatest care; it is always kept cool, but never touched with ice, even on the table. The cows, the milk, the cream, the salt, the tins, the butter, are all kept clean, and in an odorless atmosphere.—*Country Gentleman.*

[*This view of the Jersey Bull must be taken with a qualification. If early trained and disciplined, he may be educated to gentleness; but, generally speaking, after he attains to the age of four years, he begins to be more viciously inclined than almost any other breed.—*Eds. A. F.*]

Meeting of the National Grange.

This body holds its annual session this year at Washington, D. C., beginning on the 17th of this month.

MONTGOMERY CO. GRANGE, No. 7.—At the regular meeting held at Olney, 21st October, a committee was appointed, on motion of Bro. Jos. T. Moore, to draft resolutions expressing the sense of the grange on the question of local option. The report of the committee was adopted and ordered to be published, as follows:

Resolved, I, That the question now referred to the voters of our county, in regard to license of the sale of intoxicating liquors, is one which comes strictly within the province of P. of H., not being one that belongs to party politics.

II, That in the judgment of this grange such free license is very injurious to the best interests of our community and certainly to the agricultural portion of it.

III, That we earnestly recommend every voting member of our order to attend the polls at the coming election and cast his vote and use his influence "Against License."

Resolutions were also adopted providing for a board of arbitration to settle differences that might arise between members of different granges, and urging every subordinate grange to establish a board for its own special jurisdiction.

In Memoriam.

WHEREAS, All Hallows Grange is called upon to mourn the death of Sister Mattie Beard, who was ever ready to lend a helping hand in our work, and whose coming was always greeted with pleasure, our great bereavement prompts the desire to pay a respectful and loving tribute to her memory.

Resolved, That words but lightly express the feelings of any at the death of dear friends. With us (Sister Beard's brothers and sisters) they are entirely inadequate to convey an idea of our deep sorrow for one who commanded our highest esteem and respect by her faithfulness to every obligation of our order.

Resolved, That we extend to the grief-stricken family of our departed sister our heartfelt sympathies—especially to our brother, the sorrowing husband, who, in his great grief, can find unspeakable comfort from the knowledge that her young life was well spent.

Resolved, That the secretary make record of these resolutions, and send a copy to the bereaved family and one to the *American Farmer* for publication.

[The above should have appeared before, but was overlooked.—*Eds.*]

The Gunpowder Farmers' Club

Held its October meeting at John D. Matthews; several of the members absent. The Committee of Inspection at Dickinson Gorsuch's reported, complimenting that gentleman's farm and farming.

In the half hour for questions, Edwin Scott read a communication from the Linconia Farmers' Club, interesting and instructive, but rather tending too much towards the side of dollars and cents being the only object in life, and a question therein brought up a discussion on deep and shallow plowing.

J. D. M. asked whether it would be beneficial to roll his corn-field now in wheat? S. M. Price would not like to do so now that the wheat is up, as it would of necessity cover over considerable wheat, to its injury. Jos. Bosley thought the wheat would be harmed by covering and tramping.

The regular question then came up: Whether there is anything new in the making, saving and application of manure?

S. M. P. knew of nothing new, but it pays to gather up all articles fit to be manipulated into manure. By an arrangement this year in his hog-pens he has gained four times the quantity it formerly yielded. This year, from necessity, has applied his manure to wheat ground, but has not had the same effect as applying six months before.

q. Would it not have paid to place wood-scrapings, &c., with the hog manure? *a.* Do not think it would. *q.* Would it pay to gather up road dust in the dry state that the roads are in at the present? *a.* Think it would pay better to mix it with horse-stable manure, but still doubt its paying. *q.* Is it any advantage to have manure fermented? *a.* No. Prefer spreading it immediately from the stable to the sod. If fermented, prefers to apply to plowed ground.

Jos. Bosley—Has nothing new to report. Where corn is repeated, finds where he plows manure in the fall or spring, such ground beats the sod-land. *q.* Would you plow the manure in deep or shallow? *a.* You cannot well plow in deeply where there is no sod. *q.* Would you prefer plowing manure in soon after it is spread? *a.* Yes.

Jno. Crowther, Jr.—Is in favor of feeding and rotting up all his hay, fodder and corn, and leaving the coarse stuff in yard, but of hauling the stable manure direct to the sod for corn. *q.* Does the manure really gain anything by allowing it to be tramped down? *a.* Yes. It holds the urine and moisture from the droppings. *q.* Would it pay to have the fodder cut by machine, so as to save all the necessity of allowing the coarse stuff to remain out? *a.* Has no experience.

D. Gorsuch—Finds out a little every year about manure. After cleaning out his cow-yard every year he shapes up his yard with dirt, and it absorbs all the leachings from the manure. Prefers all his straw to go through the stables. Having a pile, there are many things can be added to the heap. Saves his manure over for his wheat land, and it, in conjunction with fertilizer, generally gives a good crop. Put out some trampled straw on corn ground this spring. It gave no benefit; the same straw made into manure would have done much more. Corn was much better where the manure was spread on the ground after plowing than when plowed under. There is a great deal in the shape of the manure pile; open out the manure from the stable and spread evenly. Keep the pile well rounded out, and it loses little, as manure is an excellent absorbent. His fodder goes first to the cattle, then to the hogs, and then on to the ground. It did not more than pay when he used to cut his fodder up. There was a great deal the cattle left even after it was cut. (*q.*) Straw which you cannot use in the barn-yard, would it not pay to sell at $10—that is, that which you cannot well rot? (*a.*) Prefers to let that question go over till the straw rots

Jno. D. Matthews—If his barn-yard was like D. Gorsuch's he would do like him, but advocated mixing phosphates with the manure and applying the mixture broadcast on sod land.

The discussion of the question was not concluded, and was continued to the next meeting of the club, which will be at B. McL. Hardisty's.

Work for the Month—November.

What time is left now to prepare for winter ought to be so used that the work of the early spring may be forwarded.

The Grain Fields.—All fall grains ought to be seeded before this, and care should be taken that water furrows are properly laid off and well made, so that the plants may not become water-logged and liable to winter-killing.

The Corn Crop should be secured, and that can only be certainly done by housing it now as promptly as possible. Use care in saving the fodder.

Root Crops.—Do not allow mangels, sugar beets or carrots, to be exposed to severe frosts. Ruta-bagas, and even flat turnips, will stand more cold than the others; but as soon as may be, all sorts ought now to be pitted or put into the cellar. Parsnips and salsify may be left where they grow, except such supplies as may be required for home use or market when the ground is frozen, and these can be stowed in barrels with sand or dry earth mixed through them.

Potatoes.—Dig these, taking the precaution to do it only in dry weather, as soon as possible, and expose them to the air only long enough to let them dry off, and then put them into the cellar as quickly as convenient.

Tobacco.—Be careful in keeping the houses shut only when the weather is dry and sunny, and to close out rains and high winds. Avoid too early stripping, and let the leaf stems become dry. After that condition is attained, the quicker it is done the better. Give special attention to assorting and tying up, as the way in which the samples look has great influence on the price brought.

Plowing.—The advancing of work in the spring will always lead to the fall plowing of tenacious clays and sod lands, upon which the influence of the wintry elements, the alternate

freezing and thawing, cannot but be advantageous in ameliorating their texture, liberating locked-up plant food, and destroying hibernating insects and the larvæ of others.

Live Stock.—Have an eye to the increase of your manure pile by the free use of straw under your stock, and as soon as the nights get cold put all kinds in the stables and feed a little grain and hay, or fodder.

Keep fattening hogs in small pens, a few in each when practicable,—observing, as far as convenience will allow, to have those of an age and size together. We have heretofore recommended feeding coarse-ground corn meal between the regular feeds. Let it be given either dry or wetted and put in the trough, bearing in mind that the more they eat the more profit for you. Continued feeding of corn alone causes the teeth to become sore and diminishes thereby the appetite and the quantity consumed. Milch cows now need extra care. Do not expect them, on frosted grass, exposed to cold and rains, to give profitable returns; but stable at night, feed generously, and your profit will be assured.

The Orchard and Fruit Garden.

As the larger part of planting will be done this month, we deem it in place to give the readers of the *American Farmer*, who are not experienced as to the value and suitableness of varieties, a list to better guide them in getting good fruit and such as is adapted to the central and southern sections of Maryland and nearly all of the State of Virginia. Some of the varieties named may not be the very best for the western part of the last-named State; but outside of apples we believe there will be little room for complaint.

Apples.

For the best three well-tried *summer* apples for home use and market we prefer Early Harvest, Early Ripe and Red Astrachan; and to cover the season fully, to time of what are termed fall apples, we would add Summer Queen for family use. For *full varieties*, Maryland Maiden's Blush, Fallawater and Wine. For *winter* or *keeping* apples, Limbertwig, Winesap, Shockley, Nickajack, Yates; and among the newer kinds, Cowan's Seedling and Nansemond Beauty.

Pears—Standard.

Osband's Summer, Clapp's Favorite, Bartlett, Sheldon, Seckel, Lawrence, Beurre d'Anjou and Vicar. For *Dwarf*, Duchesse D'Angouleme.

Cherries.

Early Purple, Gov. Wood, Black Tartarian, May Duke, Early Richmond, Yellow Spanish, Ida and Reine Hortense.

Peaches.

Amsden's June or Alexander for first early, (when either of these is obtained the planter need not have much anxiety as to the superiority of other quite early kinds, as there is such marked similarity existing between them in size, color and season, as well as quality, as to render more than one variety out of the lot unnecessary,) Early Rivers next; then, avoiding Hale's, we drop to Troth's Early, Mountain Rose, Foster or Crawford's Early, (they are nearly identical,) Mary's Choice or Reeves' Favorite, Old Mixon Free, Crawford's Late, Stump's Silver Medal, Piquett's Late, Beer's Smock, Heath Cling and Belyeu's Late.

In the above fourteen kinds there is of course too large a list for a market orchard, six or eight kinds being enough for that purpose. Our choice of six kinds out of the above list would be Amsden, Troth, Mary's Choice, Crawford's Late, Beer's Smock and Heath Cling.

Plums.

Wildgoose for early, Bassett's American and Mooreman for later kinds. These are not generally regarded as of the highest rank in point of quality; but we regard it more desirable to have these, if not quite so high in quality, than to have only the trees of the better-qualitied varieties.

Apricots.

Early Golden first, and then any of the other best-known kinds, if more than one variety is wanted.

Quinces.

Apple or Orange.

Grapes.

Concord, Hartford, Worden, Salem, Agawam, Martha and Goethe.

Strawberries.

Wilson, Capt. Jack, Cumberland Triumph, Kentucky, and Monarch of the West.

Currants.

Red Dutch, White Grape and Black Naples.

Gooseberries.

Houghton and Downing.

Raspberries.

Queen of the Market for red, and Gregg for black.

Blackberries.

Wilson and Kittatinny.

It must be remembered that there are long lists of apples, pears, cherries and peaches to select from; and while we are aware that many good kinds are left out of our lists, we maintain that no inferior ones are embodied therein. And after testing and observing carefully the tests of many other growers, if we were planting new orchards we should not go outside of the above, except it would be to test some of the newer kinds not named in this list. Though, as we said in the beginning, we do not intend this as a guide to the veteran fruit-grower, as such are or at least should be competent to make judicious selections for themselves.

Pests of the Tobacco and other Plants.

Prof. Rathbon, of the *Lancaster Farmer*, in a review of a number of specimens of insects which prey upon the tobacco plant, winds up his remarks with the following remedies for the pests:

I can give no remedy for the *Tobacco Boll-worm* from my own experience. When they are numerous in the South they do not attempt to hand-pick them. Spraying larvæ when quite young with suspended Paris green or London purple is said to kill them, but when they are older

they are generally under cover, and could not well be reached. Late fall plowing and turning up the pupæ to winter exposure has also been suggested. But it seems to be the general opinion that trapping the moths with shallow basins of poisoned sweets, burning torches, or vessels of molasses and vinegar, are the most reliable modes of destroying them. This latter mixture is supposed to be the best. The moths belong to the family NOCTUIDÆ or "Night Flyers" and are fond of sweets; therefore, these traps should be set at night. There is supposed to be something about the vinegar compound that attracts them.

As to the "Wire Worm" an intelligent experimenter once informed me that he banished all the cut worms and other noxious insects from his garden by mixing gas lime with the soil.

Horticulture.

Some of the Newer Grapes—No. 1.

The grape interest is not only one of great promise, but also of great proportions,—for there are nearly two million acres of vineyards in the United States.

A commensurate activity exists in the direction of better fruit, and in all parts of the country vine culturists are originating new varieties, some of which are very fine in quality and will replace many of the older sorts.

We will notice

THE LABRUSCA AND THEIR CROSSINGS.

Among those brought to our attention are:

Moore's Early.—Bunches very large, compact and heavy, and shouldered; berry black, larger than the Concord, and ripens two weeks before it; vine hardy and productive, and valuable on account of earliness, hardiness and handsome appearance. Jno. B. Moore, Concord, Mass., originator.

Brighton.—A variety of great excellence; bunches large and shouldered; berry large, of the color of the Catawba, with little or no pulp; vine vigorous, hardy and productive. Originated in Western New York.

The Duchess.—Bunches large, compact, handsomely shouldered; berry white, medium, with a thin but tough skin; little or no pulp. Sweet, spicy and good; vine vigorous, healthy and productive. "Very desirable." A. J. Caywood, Marlboro', N. Y., originator.

The Niagara.—Bunches large and compact; berry large, white, tender, sweet and melting; vine a strong grower and entirely hardy. "Of superior quality." Originated at Lockport, N. Y.

Lady Washington.—Bunches *very* large and shouldered; berry full medium, white and "luscious;" vines hardy and productive. "The grapes are so every way good, the plant so every way enduring" it must become a favorite. This, with other choice varieties, originated by J. H. Ricketts, Newburgh, N. Y.

Early Victor.—Bunches medium; berry extra medium black, with soft pulp, sweet and rich; vines hardy and productive and ripen the fruit two weeks earlier than the Concord. J. Burr, Leavenworth, Kansas, originator.

Beauty.—Bunches medium size and handsome; berry medium red, with a fine lilac bloom, sweet and high-flavored; vine strong grower, healthy and prolific. The originator, Jacob Rommel, of Morrison, Mo., has grown us very many new and choice grapes.

Albino.—Bunches large and shouldered; berry white, sweet and melting. "One of the best;" vine hardy and productive, fruiting early in the season. Wm. Haskins, Hamilton, Ontario, originator, as also of the

Abyssynia.—Bunches very large and shouldered; berry black, full medium, of first quality; vine hardy and fruiting early in the season.

Clark's Prolific.—Bunches full medium and compact; berry dark red, flavor fine, ("the taste of new honey;") vine hardy and "prolific;" the skin of the grape is thick. J. T. C. Clark, Washington, D. C., originator.

I would be pleased to learn of other new and desirable varieties. G. F. NEEDHAM.

Washington, D. C.

Kieffer's Hybrid Pear.

Messrs. Editors American Farmer:

The writer had the good fortune a few weeks since to view a small block of Kieffer's hybrid pear trees of one season's growth from the bud. Though growing on soil moderately rich, the trees stood from four to six feet high, many of them branched and as stocky as two-year-old trees of ordinary varieties. This remarkable vigor of growth was supplemented by the large leathery leaves, many of them taking on their autumn tint of a rich dark brown or purple, the whole forming a most beautiful sight.

Yesterday I visited Mr. Kieffer and was shown what fruit he has on hand, and a finer sight can hardly be imagined; the finest wax work could not be made more beautiful in appearance.

The original tree did not bear very heavily this year in consequence of its having been cut severely for buds and scions for two years past; but the few younger trees have given a fine crop. Mr. Kieffer stated that he had marketed several bushels of the fruit at the rate of four dollars a bushel. Without discussing the question of the blight-proof qualities of this pear, its early bearing, great productions and beauty are bound to place it at the head of our list of *pears for profit.* H. A. C.

Philadelphia, Oct 20, 1880.

New Early Peaches.

This subject continues to be new, as there are varieties added each year, most of which are to be earlier than any previously introduced. I have this season fruited fifteen varieties earlier than Hale's, viz: Cumberland, Saunders, Downing, Briggs May, Honeywell, Climax, all glandless varieties; also, Amsden, Alexander, Wilder, Musser, Bower's Early, and Gettysburg Seedling; all with leaves having globose glands; and Beatrice, Louise and Rivers, having reniform glands, all in the same orchard, now in its fifth year.

The result of another season has strengthened my conviction that on our grounds Cumberland is the earliest peach yet fruited, closely followed by Saunders and Downing, with Alexander, Amsden and Musser very little behind. Wilder, although ripening some fruit nearly as early as any, continued to ripen much longer, so as to close with Rivers and Louise, which came in fully two weeks behind the earliest varieties, Early Beatrice coming between.

The season being unusually early, we picked the first ripe specimens from Cumberland on June 24th, and marketed the first bushel June 26th, and to-day, July 23d, we pick the last Wilder, Louise and Rivers, while Hale's will barely be ripe by August 1st. The other new early sorts which are growing on our grounds, and which we expect to fruit in a year or two at most, are E. Canada, Early Rose, Hyne's Surprise, Ashby's Early, Baker's Early, Brice's Early, Early Lydia, Nectar, Gov. Garland, Waterloo, and McKain's Early, all having globose glands, except Early Lydia, which is glandless, and Waterloo, which has reniform glands. I make this distinction that they may be recognized, as the glandless varieties are invariably weaker growers, and the leaves and young wood are more or less subject to mildew on some soils during some seasons. We are indebted to Mr. T. V. Munson, of Denison, Texas, and to Mr. Hynes, of West Plains, Missouri, for most of the aforenamed varieties which have not fruited. Mr. Munson has probably the largest collection of quite early peaches in the country, which he is testing with the view of making public the results of his experience. In an article published in the Denison *Daily News* of June 20th, 1880, he says: "the present season has been a peculiar one, retarding the maturity of the extra early varieties, while the later came on in unusual season. This has thrown the ripening of nearly all varieties up to Hale's Early, into a heap. It has been noticed, too, that the old, well-established trees have ripened fruit much earlier, and of larger size, than young trees of the same variety." Our experience this season is that they were unusually early, and will leave, apparently, a larger gap between the quite early and later ones than at any previous season since these quite early peaches have been fruiting.

Some of our friends who have fruited Wilder, reported it as filling the season between the quite early kinds and Hale's, but with us it invariably ripened as early as Alexander and Amsden, but continued its crop a little longer. Bower's Early and Amsden on the same tree showed the latter to be several days earlier. In our orchard of several hundreed trees, about 75 were in full fruiting, many being entirely overloaded. The crop was unusually fine, high colored, and with the exception of a few trees, quite free from rot, while Hale's not yet ripe is rotting considerably. I am not sanguine that these early kinds will continue exempt from rot, but may we not reasonably hope that some of them will? All these early kinds thus far fruited are, like Hale's, half clings, and no doubt, seedlings from it, except Rivers seedlings, which are of a different class, and which we shall discard, Beatrice being too small and the others too tender for market.

New early varieties are still being introduced, and we shall continue to collect and test them as fast as we can, in order to prove, if possible, which is the earliest peach. Meanwhile, we look forward for a freestone as large and fine as "Mountain Rose," and as early as the earliest.—*H. M. Engle, of Pa.*

Vegetable Garden.

The persistent drouth has materially shortened the supply of fall and winter vegetables, has locked up vast quantities of the fertilizers of 1880, presumably in trust for future use, and has doubtless rendered many a well-planned experiment both in farm and garden of none effect. Yet no true son of the soil will suffer his plans and preparations for the future to flag on that account. Let us look forward to a full harvest in 1881;—great crops are only to be obtained by thorough preparation and expectation. I have heard gardeners remark that their situations were uncertain and so they made it a point to work as if the passing season was to be their last one in their respective places. They anticipated trouble and made haste to bring it about. Our work must necessarily be largely for the future. When the berries begin to swell and color in the early summer, we cannot, to save our lives, add a single one to the number; but we may, if we choose, have a great deal to do with the number and size of the fruit of the following year. In the month of November two years ago I was asked what was my object in draining a perfectly dry piece of land? It was because in the preceding July it was so wet that I could not drive a manure-cart over it, and I worked for the July to come. This is a most excellent time to ditch and drain, but the work should have been planned in the wet season. The bits of ground that I have drained are all my dependence for good crops.

The storing of vegetables will occupy much time this month. Beginning with *beets*, it will be well to have everything under protection by Thanksgiving. Winter vegetables are much more troublesome to keep in this mild but changeable climate than further north. During most of the winter a light covering would suffice, but this is not practicable in view of sudden and severe frost, and so it happens that we lose most by the necessary close and heavy covering. Do not cover until the last moment that you dare risk things. As for *celery*, it does not seem, at this writing, as if we would have much to protect, but enough, I trust, to experiment with in the way of keeping. *Cabbage* is best heeled in and covered with leaves or straw and kept in place by boards or branches. But I would be glad to get the experience of others in this particular. Would like to know what is an average crop of *Lima beans* per acre. The piece of ground mentioned in my last is a little less than one-third of an acre, and has yielded in all 115 bushels. This includes 12 bushels of ripe pods. Don't know that the crop is anything extra. In selecting seed I shall not separate *Dreer's* from the common Lima, but shall choose

the handsomest beans. I believe that the limit of earliness has already been reached. The *string bean* has a month to six weeks the advantage of the Lima in hardiness and earliness, which I should never hope to bridge over by the most careful selection, but such a plan as Mr. Massey suggests might possibly result in giving us more beans and less vine. Gathered beans by the bushel from the 24th July.

Cabbage for spring use must now be planted, either in frames or in the open ground. It would be wise to try both methods. *Cauliflower* for spring planting must be kept over in a frame, and those intended to head in the frame planted at once. JOHN WATSON.

How to have an Early Garden.

In addition to the suggestions of our regular and very competent correspondent, Mr. Watson, we give the following from one of our Western exchanges:

Thirty years experience as a gardener has shown me that to be successful we must begin the work in autumn. One essential of an early garden, or I might truthfully say a profitable garden, is thorough drainage; and as this work cannot be done in winter, if you expect to have an early garden next spring, if not already done, it should be thoroughly underdrained before cold weather sets in. Fall plowing, particularly on upland soils, is absolutely necessary if we would have an early garden. For eight years past I have practiced fall plowing, and I have rarely been less than two and often four weeks in advance of my neighbors who do not plow till spring. In order to have our garden ready to plant early the plowing must be properly done, and you must not plow in one wide flat land, but in narrow lands with deep, dead furrows. These furrows should run with the natural slope of the land so as to carry off the surplus water, and then an open ditch or furrow must be opened across the end of the garden to receive and remove this water. It is well in locating a garden to look for land with slope enough to carry off the water, and if this slope is to the south or south-east all the better. It is too often the case that the garden is covered with weeds which have ripened their seed, and in this case I would not plow them under, but would put on a liberal coating of straw and burn it; but the good gardener will not allow a weed to go to seed in his garden. If your garden is not already rich, give a heavy coating of manure before you plow it, and then top-dress again just before planting; but if it is already rich the top-dressing will be sufficient. In November plow your garden in lands twelve feet wide, putting the plow down deep, and back-furrowing, so as to leave the lands as high as you can in the middle, and then go through with the gravel-shovel and shovel all the loose soil from the dead furrows on to your land, filling up any depressions, so as to have a regular slope from the center to the dead furrow. The center of the land should be at least eighteen inches higher than the bottom of the dead furrows, and the grade should be such that no water would stand on any part of the garden. Unless your land is very flat it will not take more than half a day to prepare a fourth acre. Either in the fall or early winter you should prepare one or two loads of rich manure, and make it so fine that it can be spread like sand, and have it ready to top-dress your early garden. There is little danger of getting a garden too rich, and most vegetables will be two weeks earlier on a rich soil than a poor one. Any time after the middle of February, when the land is dry enough to work, you may plant early vegetables. Long before the gardens which were not plowed in the fall can be touched you will find that your ridges will be dry and mellow, and merely passing over them once with a one-horse harrow will put them in splendid order. I plant at this time peas, lettuce, spinach, radishes, beets and onions; and no matter how severe the weather afterward, I have never lost any of them except occasionally of the radishes. I see by referring to my diary that for several years past I have planted these vegetables from February 24 to March 7, and that often the mercury has been as low as 10° and once down to 2° above zero, and yet they have come through unhurt. Last spring we planted February 24, and were using green peas from this planting the 23d day of May. I plant at this early planting several varieties of peas for a succession—a few Tom Thumbs for extra early, and McLean's Little Gem, and Champion of England, which give a succession for some weeks. For beets I plant Early Egyptian, and extra early turnip, and I sow onion seed of the White Portugal and Yellow Danvers varieties for the main crop, and put out a few white sets for earlier use. Early potatoes may be planted on these well-drained ridges much earlier than on flat land, and at least two weeks gained with this important crop. There is no season when we so much crave garden vegetables as the early spring, and it is a great satisfaction to have them as soon as possible, and I feel sure that those who once begin the practice of fall plowing in such ridges as I describe will find such advantages from it that they will not soon discontinue it. At the proper season I will have something more to say on gardening.

Storing Vegetables.

To enjoy palatable and wholesome vegetables during the winter months, proper care and attention are just as essential in harvesting and storing as in cultivation. Roots and vegetables, as they are often promiscuously thrown in heaps about the cellar, do soon lose their freshness and flavor. Most of our house cellars are too warm for the best preservation of vegetables, and it is therefore advisable to store only a limited quantity for immediate use in the house, while the main stock should be kept in a cool barn, cellar, or in an out-door pit. Such a pit for family use is easily made by digging a trench about three or four feet wide and of the same depth and as long as necessary, taking care to select a situation where water cannot stand. At the approach of winter the pit is filled up to the level of the ground with the roots to be wintered, beets, turnips, carrots, etc. Narrow partitions of

soil may be placed longitudinally between the different kinds, so that each may be taken out separately. This dividing of the pit into several sections has the additional advantage of making the bulk of each smaller. Large quantities of roots in one mass are liable to heat and do not keep as well as smaller lots. The roots are then covered with enough soil, say six inches, to protect them against the frosts of early winter.

When severe cold sets in, about the middle of December, more soil is thrown on, not less than two feet, over every part of the pit, sloping off towards the sides and the surface, firmly packed down with the back of a spade. With heavy soil this will be sufficient to turn off the rain and the snow water, but in sandy soil it is better to add an additional protection of straw, cornstalks or boards.

Where a pit is not practicable and the entire crop has to be stored in the cellar, the roots intended for late keeping should be carefully selected. Only sound, solid roots keep well. These should be laid loosely in thin layers into bins or barrels and each layer covered with sand, so that none of the roots are exposed to the light. The purer the air can be kept in the cellar, and the cooler without freezing, the better will vegetables keep in it.

Onions bear a considerable degree of cold without injury, provided they are kept dry and not handled while frozen. Packed in sawdust, chaff, or cut straw, they may be kept all winter in an out house or barn.

Squashes are injured by the lightest frosts, and should be kept in a warm, dry store-room, rather than in a cellar.

The sweet potatoes we find in the markets are kept in houses expressly built for the purpose. The necessary conditions for their keeping are that the tubers are entirely dry before storing, and that the temperature of the room does not fall below 60 degrees. We have kept them in good condition till spring in a kitchen closet, packed with sawdust, in a barrel.

Common or "Irish potatoes" are not injured by a few degrees of cold, provided the cellar in which they are kept is dry. In very dry storage rooms, potatoes should be covered with soil or sand, as directed for roots, to prevent them from shriveling and early sprouting. In ordinary cellars they may be kept loose in barrels or bins. When the cellar floor is damp or wet at times, as is unfortunately too often the case in farm houses, the bins or barrels should be raised a few inches from the ground, so as to admit free circulation of air.—*American Gardener.*

Fall Turning-Up of Garden Soil.

Professed gardeners well understand the fall management of these important little family farms. It is needless to tell them how much the success of next year's crops depends upon turning up the ground (say in November) intended for such crops. But there are many others of those who have small gardens—and of this class are many of our regular well-to-do farmers—who only raise half crops of vegetables, and these of an inferior quality, and wonder how it is so. Now, we cannot too often repeat the advice, that if they will use the garden-fork, and turn the soil up full fork deep, allowing it to remain in lumps all winter exposed to the frost, it will put the soil in excellent condition and tend greatly to add to the production of next year's crops. This is especially the case with ground not so treated frequently, and we would mention that every other year is best, instead of every year as some gardeners do. Gardens, and especially old ones, should also be limed about once in five years, and salted about every other spring,—applying of lime at the rate of about thirty bushels to the acre, and of salt from eight to ten. In applying salt keep it from coming in contact with box-edging and all other evergreens, very small trees, &c. Such a course will bring up your old gardens in a surprising manner. Turnips, radishes, &c., will grow as well as they ever did, and all other vegetables be largely benefitted.—*Germantown Telegraph.*

Cold Frames.

During the month of September, gardeners sow cabbage, cauliflower and lettuce seed for early spring planting. These plants are kept through the winter in cold frames such as have, and need no bottom heat. The seed-bed should be made mellow and rich, so that the plants will be large and stocky enough to transplant into the frames by the middle or latter part of November. When the ground is forked over, and made smooth and mellow by raking the surface, open drills half an inch deep and a foot apart. The seed may then be sown along these drills thickly, by hand, and covered by raking the surface with a wooden rake, drawing the rake in the direction of the drills

For early spring planting, the Jersey Wakefield is the best cabbage, and for a later sort the early flat Dutch is good. The Algiers and half early Paris cauliflowers, and lettuce, the smooth-leaved butter and Simpson's curled. From the time the seed is sown until the plants are fit to transplant into the frames, they need no special care, outside of keeping the surface clean, loose and free from weeds.

For family use, a frame twelve feet in length and six feet in width will give abundant room for wintering all the plants needed to stock liberally a large kitchen garden. These frames are simple to construct, and can be made by anyone who knows how to use a hammer and saw. The best location for such a frame is some spot with an eastern or southeastern exposure, sheltered from the northwestern winds. For ordinary family use, common hemlock boards will answer every purpose. Before fastening the boards in place, remove the soil eight or ten inches deep the length and width of the intended frame. Then drive a post in each corner, and to these nail the boards, leaving one-half the width of the boards above the level of the surface. The upper or rear board of the frame when completed should be about two inches higher than the front board, so that when the sash is put on there will be fall enough to cast the water. Sashes are always made the same size, 3x6 feet. For safety and to strengthen the

frame it is best to put in cross ties, two inches wide, every three feet, morticed in the front and rear boards of the frame. These cross ties may have narrrow strips nailed lengthwise on the centre of each, so that the sashes may be shoved backwards or forwards without any chance of getting out of position. The soil removed should be replaced with good garden soil, and made level on the surface, before setting the plants in the frame.

By the middle of November the plants from the seed-bed may be planted in these frames, putting three or four hundred under each sash, the space being 3x6 feet. In case the weather should still be warm, with a hot sun at midday, at the time of planting, it is best to shade the plants for two or three days, and in the meantime give them two or three waterings with an ordinary watering pot or garden syringe. When the plants once take root, there is little or no trouble with them afterwards. As the weather gets colder, the sashes may be put in place, and in warm or sunny weather they should be raised at the upper ends, or shoved up or down, to give the plants plenty of air. If this is neglected, the plants are likely to grow tall and spindling.

As the spring approaches the plants will require more air daily to "harden them off," as gardeners term it. Plants kept through the winter in cold frames can be transplanted in the open ground in March or April, or just as soon as the ground is fit to work. The lettuce may be made use of in January and February for forcing in hot beds for family use.

Just as soon as the cabbages and cauliflowers are taken out of the frames in the spring, the ground may be forked over, adding some well-rotted yard manure, super-phosphate, or Peruvian guano, and then planted with lettuce plants, putting fifty or sixty plants to each sash. By this plan, and by the use of the glass, lettuce for table use may be ready three or four weeks ahead of what is planted in the open ground. These frames can be turned to good account for transplanting tomatoes, egg-plants, peppers, etc., etc., out of the hot-bed, where such plants are started. In fact, a cold frame is an important and essential adjunct to every kitchen garden, and one that will always pay its own way. The cost of construction is trifling, and the benefits derived are numerous and most satisfactory to those who enjoy home-raised vegetables. —*P. T. Quinn.*

Classification of Pansies.

The countless varieties of Pansies now cultivated may be divided in the following five classes:

I. *Self Colors.*—This class comprises all flowers which show an even shade of color, spread on the whole surface of each of the five pedals, reaching to or very nearly to the centre of the flower. The colors comprise white, yellow, brown, mahogany, bronze, pink, purple, lavender, blue, violet, black, and nearly all intermediate shades of color imaginable. Although being the least picturesque of any of the different classes, they are yet very highly prized by a great many pansy-lovers, for just that reason. They comprise also, beyond question, the larger part of those varieties which, when propagated from seed, may be depended on as coming nearly always true to their parent.

II. *Three Spotted or Face Pansies.*—Ranging in color like class I, we here include all flowers which show a distinct face (mask) in their centre, consisting of a roundish dark spot on each of the two side petals and a broad and generally larger one on the lower petal. In many flowers, especially in those of a light shade of color, this "face" presents itself on a clear ground color, while on those with dark ground the face is more frequently surrounded by a ring of some lighter color. The clearer and sharper the edges of the different contrasting colors appear, the more valuable is the flower. Most of the so-called English Pansies may be included in this class. It is by far the most numerous, being almost without a limit as to variety of colors and markings.

III. *Five Spotted or Odier Pansies.*—The characteristics of this class are very apparent. The flowers, which may have a white, yellow, pink, blue, or any other ground color, show a large, dark, mostly black, spot on *each* of the five petals. To be perfect, these spots, starting from the centre of the flower, should cover at least two-thirds or three-fourths of its surface, be of equal dimensions on each petal, and present a sharp, well-defined outline. Comprising some of the finest and most valuable varieties of flowers, this class is more easily affected by our summer heat than any of the others.

IV. *Edged or Bordered Pansies.*—These flowers present a more or less narrow, but distinct and well-defined edge or border—the color of which shows a striking contrast to the ground color of a given specimen—around the outside of each petal. The varieties under this head are, as yet, not very numerous, but enough so to make it eminently interesting and attractive. The color of the edging is generally *white* or *gold* on blue, purple, or bronze-colored flowers, and *blue* or pinkish on white and yellow ones.

V. *Fancy Pansies.*—This class includes the striped, flaked, marbled, and shaded varieties of flowers, embracing many very choice strains. They are distinguished by the great oddity and often beauty of the coloring and their markings.

The principal requirements of a good pansy, of any class, are large size, circular shape, and good substance. It must be borne on a proportionately long and stout stem elevated well above the foliage. The colors should be of a well-pronounced shade, of a rich, velvety appearance, and—in flowers with more than one color—distinct and well contrasted.—*A. Beaz, in American Garden.*

PEA-FALLOW FOR WHEAT.—We have watched with interest in the last few days the turning-in of pea vines on the farm of Mr. Otway S. Allen, near this city. The vines are pressed to the ground by a drag, and the plow following in the same direction turns them in perfectly. It is the simplest and best device we have ever seen. —*Rel. Herald.*

Floriculture, &c.—November, 1880.

By W. D. Brackenridge, Florist and Nurseryman, Govanstown, Baltimore Co., Md.

Lawn and Pleasure Grounds.

It requires no great study or gathering up mentally of such ideas as are necessary to fit a man to be able to plant a tree, make a road or walk, lay down and afterwards keep a lawn in a proper way. Yet, sad to say, we come in contact with people who have all their life spent it idly in the country, without having imbibed one single idea belonging to horticultural pursuits. This class of people we would denominate the non-professional, or such as do not allow themselves to think at all of such matters.

But there exists another class, far worse than the first, and we take the liberty of styling them pretenders, who, to hear them talk, know everything,—forgetting that they have yet to learn the first principle of the profession; and because such sort of men can be hired cheap, they unblushingly accept of situations, where the material placed under their charge goes to ruin; and much of such damage as this may be traced to the ignorance and parsimony of the proprietor himself.

We have been led to make the above remarks from having seen so many suburban residences of well-to-do gentlemen going to ruin. Farmers, as a general thing, are better posted in regard to such matters than the greater number of our professional gardeners! In several instances we have known the latter to plant young Asparagus roots one foot under the surface, and Peach and Cherry trees one foot deeper in the ground than they stood in the nursery. No good result could come or follow such a practice,—and which causes the owner to complain that such articles will not grow in his soil.

A man's aim, in order to grow successfully any tree or plant placed under his charge, should be to study its nature and requirements. No sensible individual would think of planting a Beech or Chestnut tree in a swamp, or a Skunk Cabbage or a Side-saddle Flower on the top of a dry hill; yet we are often pained to witness such unnatural changes in the position of things.

We hinted at the beginning of this article that it did not require a man to rack his brains to learn how to plant a tree; but it is necessary he should reflect over the nature of work before him, and not to be so slovenly in mind as the man we have read of somewhere, who—"He trudged along not knowing what he sought, and whistled as he went for want of thought." Now a gardener must be a thinking man, a reading man and an industrious man, as nothing short of this will make him a good keeper, cultivator and assistant to nature; and if he will only store away in his mind the examples she presents to his vision, he will find she has everything in the place best adapted to its nature, and that she never plants deep, and is always careful every fall to provide a mulch of leaves, grass or moss.

It has been observed that during the present autumn the tints of color in the foliage of our forest trees have not been so intense as usual, and this may have been effected by the past long spell of drought, and which has retarded outdoor improvements, particularly in the transplanting of Evergreen and Deciduous trees; but at the time we now write rain is falling freely, and from all appearance is likely to continue, much to the benefit of both farmer and gardener, which will afford an opportunity for at least six weeks to come to complete planting, sowing and making improvements, where the turning up of the soil becomes necessary.

It is very desirable to spade up flower-beds in the fall, leaving the surface rough so as to admit of frosts mellowing it down; while the larva of insects will also get destroyed. When the ground is poor, we dig in a portion of short manure. These beds should be forked over in spring, when it will be found that the soil is in fine condition for planting.

Gladiolus, Tuberose and Mexican Tiger Flower-roots ought to be taken out of the ground at once and dried carefully before storing away. Dahlia-roots should be lifted also before they get frosted, and for this work select a dry day; clean the roots well before stowing them away in the cellar; some people keep their Dahlia-roots under the greenhouse stage, but this position is usually too wet and too warm.

Tritomas and such herbaceous plants as usually prove a little tender when growing in heavy, damp, clayey soil, will need a covering of leaves, spreading a little stable manure over, so as to prevent the wind from blowing them away.

Cannas, if taken up in bunches, and placed under the stage in a warm part of the greenhouse, will keep well over winter, when they can be divided conveniently towards spring.

Cold frames for Violets, &c., should be banked up all round with earth, and mats or shutters got ready to cover the glass with, as we may expect cold weather soon.

Greenhouse.

It is presumed that by this time all the plants belonging to this department have been snugly housed, and the care necessary for their future well-being demands two things: first, do not saturate the roots with water—just enough to keep them moist, syringing the plants over head in the early part of the day, in fine, clear weather; second, do not permit the temperature to exceed 60 or 65 degrees, giving air to regulate this. There are always certain parts of the house warmer than the rest; in such places the more tender plants should be placed.—Among these we would name Epiphyllum truncatum, which ought to be showing its flower-buds about this time.

Towards the end of the month, such Hyacinths and Early Tulips that were potted in September or early in October should be brought into heat, but not before the rootlets have reached the bottom of the pots; for if subjected to heat sooner, the flowers will make their appearance in short heads before the leaves start to grow.

Double sweet-scented violets in pots should be freely admitted to winter quarters in the greenhouse; then their flowers will be convenient for pulling. Their odor in a greenhouse is always agreeable.

The great object in stocking and keeping up a constant succession of flowers during the win-

ter depends in a great measure on the selection of the proper kinds, as well as in having such in good condition at the season when their flowers are wanted. At this time, and on to Christmas, Chrysanthemums ought to form one of the main features in a decorative point of view. These, combined with Salvias, Roses, Sweet Alyssum, Bouvardias, Chinese Primroses, Epiphyllum truncatum, a few plants of the Jerusalem Cherry, mixed in with some graceful Adiantums, will be the most attractive articles until such time as Camellias, Azaleas, Calla Lilies and other plants, as Hyacinths, Eupatoriums and Carnations, supplant them.

The various kinds of Cyclamens, or one of sorts at least, are very desirable to have in any collection however small; their neat foliage and prim flowers commend them to almost every one. To grow them well, shallow pots should be selected. These ought to be well drained. A good compost to grow them in consists of rotted sods, leaf mould, cow manure and sand. When in a growing state they require a liberal supply of water. The flowers of some kinds emit a delicate perfume.

All tubers of Gloxinias, Gesneras, Achimenes, Nematanthus and their allies, so soon as their leaves have decayed, ought to have water withheld and the pots containing the roots placed away in some cool dry place.

Bedding-out plants, as Verbenas, Alternantheras, Achyranthus, Coleus, Abutilon vexillarium variegatum, may be propagated to advantage during the winter. It will be found that cuttings of these root best in clean sand; and so soon as they have made roots one to two inches long it is advisable to place them singly in 3-inch pots; but where room is scarce some people place 3 to 5 plants in one of these pots; but each of these plants are potted off singly so soon in spring as the weather becomes warm enough to admit of being removed to a cold frame.

Kieffer Pear.

We have had an opportunity, by the kindness of Messrs. R. G. Chase & Co., of seeing and testing the quality of this new hybrid pear, and without hesitation pronounce it a very superior variety.

In size it is large and of good form,—the skin, when ripe, being smooth, of a deep yellow tint, having a tinge of red on the side exposed to the sun. Flesh fine-grained, juicy, sugary and aromatic, emitting a faint perfume somewhat resembling that of a quince.

We feel convinced that it is a pear that will take the market; and if, as reported, the tree is a good grower and not liable to be affected by blight of any kind, will constitute it an invaluable acquisition to pear-growers generally.

Garden Notes.

The new sorts of early-blooming Chrysanthemums promise to be fine additions to our hardy border plants for autumn decoration. One of these, Mad. Bachaux, we have had in full bloom since the first week in September, and now (October 12) it is still covered with bloom and buds, though none of the older sorts in the same border are yet in bloom. The color of this variety is a peculiar soft rose, brightening to yellow in the centre, very full and double, and in size classing with the daisy-flowered section. The great fault hitherto with the Chrysanthemum, as an out-of-door flower in our climate, has been that it blooms so late that the flowers are frequently ruined by frost. These early-flowering sorts are attracting a great deal of attention in England, and our borders will soon be enriched with sorts that will give us a fine bloom all through September, while the fine old late ones will continue the display under glass a couple of months longer.

Indeed, if the accounts in the English journals are true, the new very late blooming sorts will lengthen out the Chrysanthemum bloom from September to March. We are having an extremely dry fall, and fruit-wood of all sorts will probably be well ripened for the winter, thus increasing our chance for fine crops next year. Last autumn we lost almost all our fruit-wood on the Fig tree, from the fact that they kept growing strong and sappy until the severe freeze in early part of November, which killed the immature wood before the usual winter protection could be applied. From the same cause we lost more Tea Roses than I ever knew killed here before. I have never had any trouble in keeping tender roses through our winters, if the wood had any chance to ripen in October. The old practice of bundling these plants up with straw I consider worse than useless. Our Tea Roses are grown thickly in beds, and the best protection is a heavy coat of rough stable-manure all over the ground between the plants. The tops may get killed down to the manure, but that makes little difference, as the plants are all on their own roots, and they will shoot out and bloom just as well as ever. All tender roses for out-doors in our climate should be grown on their own roots; but, with this exception, I am of the opinion that all roses will give more bloom when budded on Manetti stocks than in any other way.

There has been a great prejudice in this country against budded roses, but I am satisfied that as people learn to take better care of their roses there will be a great demand for plants budded on good stocks. Especially will this be the case where the plants are grown for winter forcing. We have here four very large plants of Marshal Niel, which cover the roof of one rose-house 75 feet long. Two of these are on their own roots, and two are budded on good stocks. Those on their own roots grow rampant, but give few flowers; while the budded plants not only grow strong, but bloom three times as much as those not budded. This is the experience of all florists, not only with M. Niel, but with all the fine roses used for forcing. The tall tree roses, budded four or five feet from the ground, will never be as successful nor as popular here as they are in Europe. The dog-rose stocks, on which they are budded, do not make fibrous roots enough for our climate, and in my opinion this is not a pretty style of growing roses anyhow. But all the more feeble-growing Hybrid Perpetuals will do much better budded

on Manetti about five inches from the ground. Even the trees would do well in this way if the earth were banked up well above the union with the stock in winter, so as to preserve some buds above the junction. And after all, for winter production, what is better than the earth? Our Tea roses being massed closely in beds, makes this protection impracticable; but everywhere else we use the earth for winter protection.

Our Fig trees are bent down and pegged fast to the ground, and then mounded over with soil. Hydrangea Hortensia we peg down in like manner, and shingle them over with large sods.—Our tender Raspberries are laid flat on the ground and a few shovels-full of earth thrown over them. No winter protection is so handy or so effective. The great danger in using straw or manure is that the mice may harbor in it and do great damage during the winter, or the material may heat and do as much injury as the frost. So, whenever practicable, I use earth alone as a winter covering.

The season is now here when our stock of edible roots of various sorts must be stored away for the winter. Where no proper root-cellar exists, I know of no better way for keeping these than the method in use for generations in the southern part of the Eastern Shore. I have there kept Sweet Potatoes in this way until June without any loss whatever. In the first place it is essential that a good supply of pine leaves, or "shatters," as we used to call them, be on hand, as nothing else is to be compared with them for resisting damp and cold. Don't attempt to use straw in place of pine leaves, as it will heat and rot, and defeat the object.

Having your roots and your pine leaves ready, throw up a circular platform of earth six feet across and a foot above the surrounding soil. Make the surface smooth and level and cover with pine leaves a foot thick. On this make a conical pile of the roots, about four feet across at the base (say 10 bushels.) Cover this conical pile of roots with a foot of pine leaves. Then cover with earth, beating it smooth so as to shed the rain. At the top of the cone leave a space six inches square without any earth covering. In this set a small chimney of four pieces of boards nailed together. Put this on the top of the heap, resting on the leaves and held in place by the earth. When it rains lay a piece of board over the opening. Let the heap remain this way for about ten days or two weeks, when the chimney should be removed and the earth cover made fully eighteen inches thick all over and well beaten to shed the rain. It is much better not to put more than ten bushels in one heap, as much loss will occur in opening a larger heap. I have never tried to keep Sweet Potatoes in this way in this latitude, but I believe they could be kept here if the earth cover is made sufficiently thick. Any other roots are kept in this way much better than in cellars or pits. For Turnips I use no pine leaves, as it makes them too warm. They keep well enough in a simple mound of earth. For Irish Potatoes no cellar can equal this method.

W. F. Massey.

Hampton Gardens, Oct., 1880.

Home Department.

Home Study.

It is a great pity that there is not more attention given to the pursuit of knowledge in our mature years, which in earlier life was considered so all-important. There is liberal provision for school advantages, and no lack of desire for them; indeed, there seems to be something bordering upon a mania for these. Black and white, rich and poor, seem alike determined their offspring shall have every such privilege open to them; and yet the moment when what we call school days are past there is no more thought of any further need of study. This could hardly be the case if in the school course there had been any real desire for knowledge awakened; and thinking people are beginning to realize that there is something lacking in the system which leaves the mind inactive as soon as the propelling power ceases.

That the stereotyped course so universally adopted in these days does, in many instances, leave us well-developed minds, that reach for and attain eminence in every branch of learning, is not to be denied; but I venture to assert that it is in most cases where there was the added influence of intelligent parents or guardians.

I would not for a moment advocate any more home study for those who go to school, but for the parents and older members of the family; and that not for their own sakes alone, but for the power it gives them to help the younger ones. It is so easy for those who know all about what the little folks are laboring after, by a little manifest interest in the subject and relative suggestions, to lift them out of the ruts of simple drudgery, and, setting their own little minds in motion, to send them back to their classes in a spirit of inquiry which would make the routine of study of some importance to them beyond their daily marks or their standing in school.

The children who go from a home where topics of general interest are intelligently discussed among the older members of the family carry with them to the school-room some idea of what they must acquire to fit themselves for such companionship; and this, though not the highest of motives to give them, is no mean stepping-stone to excellence in most things.

The truth is that the spirit of "modern conveniences" has overridden everything else, and in the new adjustment of affairs generally our children, like most things, must needs be put through a "patent process;" and we look for a prime production therefrom without any effort of our own. Our little ones are thus submitted to the usual course of schools, both week-day and Sunday, with full confidence that a few years hence we will find them at least on the level of average man and womanhood; and we are satisfied that they are reflecting credit upon us if their marks and grading are up to the standard and they figure conspicuously upon examination days. It would seem truly that we are thus pampering ourselves in indolence and shirking our responsibility as parents. While we are satisfied with these things, there are

philanthropic men of eminent ability, who, having discovered the inadequacy of such a course to develop the best abilities of the youthful mind, are exerting themselves to reform the present system, and, if possible, to leave some chance for thought and reasoning powers to grow under it. While they are doing this within the school-rooms, which is the limit of their province, we may accomplish an equally good work by bringing more of thought and painstaking to bear in the homes of the children. Laboring people, to whom the privileges of the present day are a real God-send for their children, practice much self-denial in order that they may have the full advantage of them; and those of us more favorably circumstanced, who do not hesitate to make use of what was chiefly intended for their benefit, owe them some returns, which it is easily within our power to give. It lies in sending with our children the effects of such home influences as will give to those less favored a true estimate of the education they are striving for. One earnest and enquiring mind often leads a whole class in its search for knowledge; and it is fair to presume that one to have had the bent given it in the atmosphere of other cultivated minds.

In assuming it to be our duty to give such incentives to our children, I assume that we are ourselves fitted to do so, which will certainly not be a true supposition unless we give some thought and study to the purpose. If on becoming wives and mothers we have devoted ourselves exclusively to the more material claims of our families, or to the allurements of society, leaving the resources of our mental storehouse in the background, we are not likely to be of much use in the way I have suggested. We often drift into such a condition by simply yielding to outside influences, with no conception of our danger; and during the early years of married life there is much to excuse it. The greatest safeguard a young mother can have against such deplorable consequences is a husband who keeps his head clear, and by supplying subjects worth thinking and talking about, and abundant good reading-matter, helps to ferry her intellect safely over this high tide of domestic tribulations. The value of such a help is inestimable as children grow to the age of observation; and the woman who retains her ambition for self-culture and that of her children without the aid of their father is indeed to be pitied.

When the best education possible to us as school-girls was considered finished, we were only entering upon the true field of learning, and most of our teachers took pains I am sure to impress this fact upon us. How is it possible, then, while every year multiplies the facilities for continued study and develops something more to be learned, that we should care so little about it? One hour of application each day to our matured minds would be of more value to us than the usual school-hours were in our more thoughtless days; and this at least most of us might appropriate to the purpose if so determined.

Many a woman who would gladly make the attempt refrains, from pure moral cowardice,—fearing to draw upon herself the criticisms of others whowill at once discover some defect in her domestic affairs as the consequence. Whereas the truth would doubtless be that in the effort to secure this time to herself, she had probably given more than usual care to her household interests, Nothing helps more to bring our work into systematic order than a fixed purpose, which requires a definite and stated time for its accomplishment. To the woman with unlimited cares and duties, this idea of devoting any of her time to studying books no doubt seems absurd; but if to any degree the thirst for knowledge is upon her, she will find it a rest to draw her mind away from those other duties and furnish her with thoughts that will take much of the hardship out of them when she returns to the dull routine. As to the time spent, she will be sure to regain it in renewed strength and energy. I have reviewed much of my school-work with baby in my arms, and read novels under the same circumstances, both of which did me much good.

A greater impediment in the way of self-culture than want of time or inclination, is the want of material to feed upon. There is nothing in which we are all so given to parsimony as in the purchase of good reading matter. If the book agents, of whom there is no scarcity, are sufficiently persistent, they will now and then succeed in leaving among our scanty collection some worthless volume with a catch-penny title; but you will search a good many farm-houses to find anything worth reading. We spend hundreds of dollars freely for school privileges for our children, and then begrudge five for material with which to continue the education after they return from school.

Unless we know ourselves to be competent to judge, let us consult some person of undoubted ability to suggest what we shall procure, and then get it, if possible, before the taste for cheap and inferior reading matter is too strong to be overcome. Fill the soil so full of grain that there is no room for weeds. We owe it to ourselves, in this age when knowledge is almost thrust upon us, to open our understandings and take it in. We owe it to our children to keep before them an example of what the average human mind is susceptible; and we owe to society our influence towards elevating it above our ambition for mere pleasure or gain, and to this end our best and almost only charm lies in home study.

CERES.

Odds and Ends.

Messrs. Editors American Farmer:

It is a bad anything that's of no account, and there is nothing but might be made use of in some manner, form or shape. There are things hard to root out or remove: such as laziness,—worse in men than horses. There is a vast difference in idleness and industry; by one we sink, by the other we thrive. We see and know these facts; they may be accounted for or guessed at. There are varieties in everything; among men as well as animals. Mark the difference in men, animals, birds and insects. As in habits so in results; cause precedes effect.

You cannot make a silk purse out of a sow's ear, or a mountain out of a mole-hill. In all kinds of business there must be more or less mind, and mental faculties are useless without industry; and it, without method, is of little consequence. We see exemplifications of these every day. The early bird finds the grub, and the little busy bee gathers honey from every opening flower. There is something amiss when we see men in any vocation making small progress in their different spheres. It must be for want of industry, judgment or luck. The same management, pains and means do not succeed the same year everywhere. The ground may be similar, but does not yield the same amounts yearly, from difference in seasons. Notwithstanding these changes, the earth must be cultivated; man must make his living by the sweat of his brow. He must do something in or out of doors, on land or water. With the faculties he has been endowed with by God he must make the proper uses. All the elements of which the globe is composed are in some way requisite for the use and sustenance of men and animals. It would seem, then, that diligence and wisdom are requisite to the maintenance of things in general. God rules the universe; man proposes and he disposes. However different our vocations, for it takes many to make a world, the farmer feeds the world. In return others supply him utensils and materials. So every one for himself, and one another and God for us all. Man should be his own best friend, for it is said his destiny is in his own hands. If he does not sow he cannot reap. If he does not use properly the means everywhere presented to him, he has himself to blame. There is that in the breast of every man to cheer him in the performance of his duty. On the contrary, remorse accompanies him who commits errors or omits duties. "Diligence is a fair fortune and industry a good estate." "What is better than a promising young man? A paying one." C.

West Va.

Keep Out of the City.

The following advice from the *Western Rural* deserves to be read and pondered by our young men in this section:

About the most reprehensible piece of business that we know anything about is the advice sometimes given by parties who are in some way interested, to young men in the country to come to the city. It is bad advice, and scores of honest country lads find it so every year. Occasionally, and only occasionally, does the young man from the country find a desirable opening in the city, and begin a signally successful career. The city is full to overflowing. There is no business that is not greatly overdone, and there is no business which cannot at any time be supplied with more help than it needs. There is no position now filled which cannot be filled with as much competency as it now is, and at a much less salary than the present occupant is receiving, almost at a moment's notice. Employers are usually willing to pay what services are worth and desire to retain tried and faithful help. Otherwise there is not a man or woman employed in Chicago to-day who would not have their salary reduced, or their place filled by some one else. Times are now prosperous. Business is at its noontide of success. Never was more money made in the marts of trade than is being made here now; and yet, while this is true, we have hundreds of young men who are either working for starvation wages, or are wholly idle.

Is it wise, therefore, for a young man to come from the farm or the village into this overcrowded community where the chances would be a hundred to one against success? Where he now is, he has room, and not only has room, but he can get better remuneration for his services than our young men will average. A familiar comparison will be beneficial. Ten dollars a week is probably the average for the salary of a clerk. We know of competent and accomplished book-keepers who are working for ten dollars a week, and we know competent clerks who are working for five and seven dollars. For our present purposes, however, we will take ten dollars for the average. Out of this, at the very lowest estimate, five dollars must be paid for board, and that will secure only a small room without fire in winter. Seventy-five cents a week will be the average for washing. Two dollars will have to go for clothes, and then comes the almost inevitable cigar, theatres, and other gratification of tastes which are so easily formed in the city, and which cost the average young man at least two dollars a week. We have thus figured up an aggregate of about five hundred dollars for expenses, leaving only a few dollars balance, and that balance will only be found in very few instances.

Now in comparison with this, let us look at the common, industrious and frugal farm hand. He receives from eighteen to twenty-five dollars per month and his board. This is about as good as ten dollars per week, and if he gets the higher sum it is more. He has no temptations to beset him like the young man in the city, and consequently his tastes are less expensive. The result is that in a few years he is the owner of a farm and the employer of help. Every reader knows that some of our most prosperous and wealthy farmers began life in just this way, and it is not unusual for us to receive letters from farm help, saying that they are saving their money, and that they intend soon to have a farm of their own. Now cordially, young man, which is the better off of the two classes?

What Not To Do for Sick People.

Don't make a fuss. Don't bustle, don't fidget, don't prognosticate. Don't hold consultations in or about the patient's room, recounting all your own and your neighbors' experiences in what you suppose to have been like cases. Don't meddle and advise and experiment. We all need a great deal more letting alone than we get, and when we are sick it is one of our prime needs. If mortuary lists were honestly tabulated we should find that more people have been bored to death than have died from neglect. The pest of the sick-room is the inevitable

friend who drops in to "cheer up" the patient, the glistening eyes and flushed cheeks which such ministrations evoke being hailed as evidences of success by the well-meaning persecutor. Don't tease the patient with questions about food or drink, but present the proper quantity at suitable intervals; and if one article is found to be disagreeable, quietly substitute another without remark. Don't think, because the patient declines nourishment, that it becomes less necessary to administer it. By quiet, firm, methodical persistence in presenting food at stated periods, objections will become feebler and cease, in self-defence. Solid food need not be insisted upon unless by special direction of the physician, but milk and beef tea should never be omitted. Don't shut out the pure air and sunshine. The physician will exercise his skill in vain, if wholesome food, pure air and peace do not abet his efforts.

A Bill of Fare for Thanksgiving Dinner, with Corresponding Recipes.

Oyster Soup.

Roast Turkey and Boiled Ham.
Maccaroni.
Sweet and Irish Potatoes.
Stewed Turnips and Boiled Onions.
Tomatoes and Cold Slaw.
Celery, Pickles and Jelly.
Cranberry and Apple Sauce.

Plum Pudding or Snow Pudding.
Pumpkin Pies, Cranberry Tarts.

Fruits and Nuts.

Oyster Soup.

To two quarts of oysters and their liquor add two quarts of boiling water; boil this for two hours, removing occasionally the scum which will rise to the top. In this, while boiling, drop one small onion whole and one blade of mace, both of which remove when at the end of the two hours the oysters are skimmed out and chopped fine. Return the chopped oysters to the soup and add one quart of fresh oysters which have been washed clean and drained, but not cut up; season according to taste; then add, when boiling, two tablespoons of flour which has been rubbed to a paste with butter; and immediately after this the well-beaten yolks of six eggs mixed with a teacupful of rich cream. A little celery chopped fine or celery seed improves it for the taste of most persons. Great care must be taken to prevent scorching, and it must be removed from the fire as soon as it begins to boil, after adding the eggs and cream.

Roast Turkey.

Let the turkey be killed and cleaned 24 hours before using if you can. For dressing or stuffing, soak light, well-baked, but decidedly stale, bread, in boiling milk, as much as it will absorb; this mash season rather highly, adding for flavoring thyme or sage, as you prefer, and a liberal quantity of butter; having the inside of the turkey wiped dry, sprinkle it with salt and pepper; then stuff the place from which the craw was removed and the inside of the turkey with the prepared stuffing; close the openings securely, either sowing or tying; bring the wings and legs into nice shape also by tying, all of which strings must be removed before going to the table. Thus prepared, allow ten minutes to each pound of turkey, and a brisk fire. Do not put any water in the pan if the turkey is at all fat, as it should be, but set the pan on a grate or substitute for one, a few inches from the bottom of the oven, to prevent burning, and if that is not sufficient place a shallow pan with water under it until the turkey is nicely browned; baste with the grease from the pan or a little butter and water mixed, every ten or fifteen minutes; when of a good color cover all over and around with nice wrapping paper, previously greased all over; this prevents scorching and improves the flavor.

For *gravy*, stew the giblets until very tender and season highly; chop fine. When the turkey has been removed, set the pan with the drippings from the turkey on the top of the stove; while boiling, dredge it thickly with flour, and then pour in the giblets and broth in which they are boiled; and if these are not sufficient to make it the proper consistency, add more hot water.

Boiled Ham.

Allow 15 minutes for each pound of ham; if old, soak over night; change water once while cooking; when done, skin at once; sprinkle thickly with sugar, dredge slightly with flour and place in the oven a few minutes until brown, but be careful to prevent scorching; eat either hot or cold, but slice very thin, and begin in the middle of the ham to cut it.

Maccaroni.

Prepare in the dish in which it is to be served; fill the dish half full of maccaroni, (Italian,) broken in lengths of an inch or two; cover with boiling water and place on the back of the stove for half an hour; if then there is any water remaining in the dish, drain it off; put lumps of butter here and there over it; season with pepper and salt, cover with rich milk and then grate a layer of cheese all over the top; bake in a moderate oven a half hour or more.

Stewed Turnips.

Cut in size and shape of dice, stew till perfectly tender, drain all the water from them, and prepare two cups of rich milk boiling and thickened with a teaspoon of flour and tablespoon of butter rubbed together; first season the turnips, then turn into their dressing; when it comes to a boil, dish up.

Boiled Onions.

Skin and trim the ends nicely; lay in cold water an hour or two before wanted; then cover well with boiling water, which change once during the process of cooking; when thoroughly tender, drain carefully, butter and season; and when in the dish for table use, pour over them drawn butter, made by rubbing in half-tablespoon of flour and one of butter together and stirring into a half pint of boiling milk.

Sweet Potatoes—Baked.

Irish Potatoes.

Boil till done; mash very thoroughly; add salt, cream and butter, and beat five minutes with a large fork or spoon; set in oven to heat.

Tomatoes—Stewed.

Cold Slaw.

Shred the cabbage very fine, but do not chop it; dress with Mayonaise dressing, the recipe for which was given by a contributor in the June No. of the FARMER.

Celery.

Clean and trim nicely, slitting the upper ends two or three inches, and stand in cold water in a cool place a few hours before using.

Cranberry Sauce.

To each quart of cranberries, when sufficiently cooked, add one pound of white sugar; let it boil a few minutes and turn into moulds or bowls until cold; it will keep shape and be an ornament to the table.

Apple Sauce.

Take the evaporated apples now found at first-class groceries; cover with cold water in a vessel that will close tightly; set far enough back on the stove to admit of slow stewing, but do not stir them; when done, sweeten moderately with white sugar, and they will be delicious.

Plum Pudding.

Two cups grated bread crumbs; ½ pound nice beef suet, chopped fine; ½ pound of raisins, seeded and chopped; ½ pound of dried currants; one glass of wine; 6 eggs well beaten; one nutmeg; one teaspoon of allspice; one cup of sugar and a little salt; rub butter and sugar together; add eggs, then the other ingredients; fruit last and dredge thoroughly with flour; boil in a well-buttered tin bucket plunged in a pot of water for three hours; serve with hot sauce.

Sauce.

Make two teacups of foundation, with boiling water and a tablespoonful of corn starch; when boiled, add 2½ cups of sugar and one of butter rubbed together; the juice and grated skin of one lemon; one wine-glass of wine or brandy.

Recipes for pumpkin pies and snow pudding have already been given.

Cranberry tarts are made by cutting puff pastry, when rolled, with a round cutter and placing one on the top with the centre cut out; when baked, fill this place with prepared cranberry.

In order that everything shall be really perfect of its kind, great care must be taken that the cooking vessels are such as will impart neither color nor flavor to what is cooked in them. In all my experience I have found none equal to the marbleized ware recently brought into use, that can be so easily kept clean and will also bear the usual handling of servants.

KALMIA.

A tripping or stumbling horse is never safe for the saddle or for driving. He may be a good horse for the farm, but if the habit is once formed, whether from disease or any defect, he should never be mounted or driven on the road.

Curing Hams.

The following recipe comes to us from one of the most accomplished and notable housewives in Baltimore county, whose hams are well known for their excellence:

To every 1,000 pounds bacon, half bushel fine salt, five pounds brown sugar, three pounds saltpetre, quarter pound cayenne pepper, and sufficient molasses to moisten the above ingredients, which must be thoroughly mixed. Each ham is well rubbed on both sides with this mixture and packed in meat tubs—skin down—where they remain four weeks; they are then hung up in a dark stone meat-house and smoked constantly for three days with hickory wood. During the late winter and spring we make an occasional smoke during damp spells of weather. The meat should be entirely cold before curing. We generally let it hang for two days before curing it.

J.

Awards to Boys for Large Yields of Corn.

At the Harford County (Md.) Fair the prizes offered by the late Jno. W. Bond were announced and distributed. The plot cultivated by each competitor was one-eighth of an acre, and the following were the successful contestants:

Adam Horn, Jr., who raised 1,626 lbs., or at the rate of 37 brls., to the acre; Addison L. Wilson, aged 18, son of Wm. A. Wilson, who raised 1,604½ lbs.; Shadrach S. Robinson, aged 18, son of Jesse Robinson, who raised 1,588 lbs.; Geo. W. Gladden, aged 9, son of Wm. Gladden, who raised 1,533½ lbs.; Louis L. Dehn, aged 16, who raised 1,524 lbs. The average production was about 35½ barrels. The prizes were respectively 100, 50, 25, 15 and 10 dollars.

Books Received.

KEEPING ONE COW, pp. 132, $1. *Orange Judd Co., New York.* This little work contains the experiences of a number of individuals keeping one milk cow, and contains many valuable suggestions for those who, whether in villages or country, prefer to have a supply of good fresh milk for family consumption produced at home instead of bought.

FARMING WITH GREEN MANURES, by C. Harlan, M. D., pp. 269, $1. *J. B. Lippincott & Co., Philadelphia.*

This work has for its main object the demonstration of the success achieved in improving land by the employment of green manures, but it contains besides a discussion of numerous other points in farm management, which may be followed with interest and profit.

THIRTEENTH ANNUAL REPORT OF THE OHIO STATE HORTICULTURAL SOCIETY. From Geo. W. Campbell. This is an useful volume, filled with reports of the meetings of this practical society and papers on fruit-growing read thereat.

The American Farmer.

PUBLISHED ON THE FIRST OF EVERY MONTH

By SAML. SANDS & SON,

At 128 *W. Baltimore Street, (sign of the Golden Plow,) Baltimore, Md.*

Wm. B. Sands, Proprietor.

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Transient Advertisements payable in advance—all others quarterly.
Advertisements should reach us by the 27th of the month, to secure insertion in the succeeding issue.

BALTIMORE, NOVEMBER 1, 1880.

The American Farmer for 1881.

The present month and next make the most favorable season for our friends who know the merits and record of the *Farmer* to extend among their fellow-agriculturists its circulation. It only needs, as we believe, that those who have followed its course for the many years under its present control, who are witnesses of its efforts on behalf of agricultural advancement and improvement, its contributions to the literature of progressive farming, and its endeavors to stimulate our agricultural community to improved methods and economical processes, shall commend it as it deserves, and as they know it deserves, to neighbors and friends, to double, and more than double, our subscription list of the present year. Will not our present readers do this for their own sakes and ours?

Terms for 1881.

One copy one year, $1.50. Three copies one year, $4. Five copies, $5. For $10 we will send ten copies and an extra copy free to the getter-up of the club.

To ALL NEW SUBSCRIBERS whose names are received before December 31, whether singly or in clubs, we will send three numbers of 1880 FREE.

Baltimore's Celebration.

The celebration of the 150th anniversary of the founding of Baltimore, marked by parades, spectacular displays, illuminations, historical addresses, &c., from the 11th to the 19th of October, was one of the grandest demonstrations ever witnessed in this country, and drew many thousands of people to the city. In the procession of Thursday, place was given to representatives of the agricultural and horticultural interests. The Maryland Horticultural Society had a symbolic car, representing a bower of Flora, and decorated with plants, flowers and vines. Messrs. Robt. J. Halliday and John Cook, florists, had cars with emblematic devices; and the gardeners of the Frederick road another, decorated with handsome plants. The farmers of Baltimore county were represented by a cavalcade of several hundred men, and the Garrison Forest and Patapsco Granges had wagons handsomely filled with farm and garden products and elaborately decorated. The whole affair was very creditably gotten up and proved one of the most attractive features of the display.

The Fat-Stock Show.

This exhibition, under the auspices of the Illinois Board of Agriculture, will this year be held in Chicago, in the exposition building, during the week commencing November 15, and promises to be a larger one than either preceding it. These shows possess great interest for herders especially, in view of the ever-increasing demand abroad for American meats.

The International Dairy Show, held in December of 1878 and 1879, in New York, will be intermitted this year. The last one, it was understood, was not financially a success.

Cattle Diseases in Maryland.

In the vicinity of Baltimore numerous cases of pleuro-pneumonia have appeared within the past few weeks, many terminating fatally. The measures taken for its extirpation do not seem very vigorously pressed, although the powers given under the law are now ample for its suppression.

In Worcester county the Texas or splenic fever made its appearance during the past month, but the appearance of frost put an end to its attacks. Dr. Lemay, the State Veterinary Inspector, who was sent to investigate the disease, reported there was no danger at this season of its spread.

CORRECTION.—In the awards at the Baltimore County Fair the *first*, and not the second, prize for Berkshire sow over two years old was awarded Mr. F. Von Kapff, whose advertisement of some fine stock will be found in the FARMER.

Harford County Fair.

The annual fair was one of the best ever held, though the attendance, owing to the attractions the same week of the Baltimore city celebration and the fair in Cecil, the adjoining county, was somewhat diminished. Financially, however, the result was a success.

All the cattle and horse stalls were filled, including new ones just put up. The showing of Short-horns was good. There was also a creditable display of Jerseys, Devons and Natives, a few Ayrshires and working oxen. The sheep and swine pens contained numerous and handsome specimens of the several breeds. The fruit display was notably fine, and in the ladies' department there was an enormous display of the products of their skill and taste. In the horse department all classes were well represented. On the second day of the fair, Prof. S. B. Heiges, of York, delivered the annual address.

THE CECIL CO. SOCIETY held its first annual fair October 13, 14, 15, and it proved a great success in every department and was well attended, although the cotemporaneous celebration in Baltimore and the fair in Harford had the effect to diminish the visitors. The cattle, horses, sheep and swine exhibits were all large, and the other departments very creditably filled. The fair is very popular among the citizens of the county, and seems to have promise of a successful and useful career.

THE FREDERICK CO. FAIR was as usual a very excellent one, with many attractive features, but the continuance of rain during Thursday, Friday and Saturday affected very injuriously the attendance and the receipts.

Large Importation of Herefords.

Mr. T. L. Miller, of Illinois, a wealthy gentleman, who has taken great pains to introduce the Hereford cattle to public favor, imported last month into this port a shipment of over one hundred head. They are now undergoing the quarantine of ninety days provided by law as a safeguard against the introduction of pleuro-pneumonia, on the Winans property on the Baltimore and Ohio Railroad, a few miles from Baltimore.

The Agricultural Fairs.

During the past month a number of fairs have been held in this and the neighboring States, which, notwithstanding the political excitement attendant upon the presidential election and other causes, have been generally very successful. The number of these exhibitions preclude the possibility of our giving the particulars in our limited pages, and the exhibitors generally being of the respective counties in which they were held, have been fully detailed in the county journals; but we are pleased to notice that a number of our manufacturers and agents of agricultural machinery aided very materially in adding to the interest of the shows.

The Washington county fair was peculiarly interesting, and the extent of the exhibits superior to those of any former exhibition, and made the fair worthy of the celebration of the "silver wedding" of interests between the association and the people of the county. Among the cattle were herds of thoroughbred Short-horns, Alderneys, Jerseys, Guernseys, grade cattle, Devons, &c.; and a large exhibit of sheep—long-wools, Cotswolds, Merinos and other varieties; and a better display of swine was seldom witnessed at a county fair, among them being several of the celebrated Yorkshire breed, imported from England by a citizen of the county. The main building had its entire 40,000 feet of space taken up with household and manufactured articles. Among them, attracting general attention, was a large display of mammoth apples, some of them weighing as much as two pounds.

An extensive display of agricultural machinery, much of it in operation, attracted attention from the farmers, and the agents of the reapers, threshers, mowers, &c., were busily plied with questions about their machines.

Col. A. R. Boteler, the orator, indulged for a while in a retrospect of the association, recurring to its birth twenty-five years ago, when he delivered the first annual address, and speaking of the success which had carried it through, despite of doubts and misgivings, to the extensive and creditable exhibition of this, the twenty-fifth anniversary of its birth. He congratulated the association upon the exhibition and attendance, showing the appreciation of the people for agriculture, the highest and noblest of all pursuits. The condition of agriculture, he claimed, in a State or country was the best evidence of the civilization and advancement of that State and country.

He referred in this connection to Egypt, Greece, Carthage, Rome, China, Spain, Sicily, Tuscany, Normandy, and our own country. He then spoke of the slow progress of improvement in agriculture and its causes; of the true objects of these fairs being to hasten this progress, and urged upon his hearers the duty of educating the youth in scientific and practical knowledge of farming.

In conclusion, he spoke of the wisdom of the founders of the association in combining the

interests of the agriculturists and mechanics in their society, and urged the farmers to stand by their mechanics and thus cultivate the home market—the best market for their products.

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Baltimore Markets—October 30.

Breadstuffs.—*Flour*—Dull and sluggish. We quote: Howard Street Super, $3.50@4; do. do. Extra, $4.25@5; do. do. Family, $5.25@6.25; Western Super, $3.50@4; do. Extra, $4.25@5; do. Family, $5.25@6.25; City Mills Super, $3.75@4.25; do. do. Low and Medium Extra, $4.50@5; do. do. Rio Brands Extra, $6.12½@6.37½; Spring Wheat Family, $5.50@6.25; Fancy brands, $7; Rye Flour, $4.75@5.

Wheat.—Southern firm; Western steady. We quote Western at $1.13¼ for spot and October; $1.13¾@$1.14 for November; $1.16½@1.17 for December, and $1.19½@1.19¾ for January; Southern at $1.05@1.12 for Fultz, and $1.17@1.18 for long-berry.

Corn.—Southern dull and heavy; Western steady. We quote Western at 54½@54¾ cts. for spot and October; 54¾@54¾ for November, and 55@55¼ for December. Southern white at 50@51 cts., and yellow at 53@54.

Oats.—Dull and heavy, with quotations of Western mixed at 36@37 cts. Southern 40@41 cts.

Rye.—Quiet. We quote good Maryland $1@1.01; prime Pennsylvania $1.02.

Cotton.—Dull but steady, with quotations as follows for spots: Middling, 10¼; Low Middling, 10¾; Strict Good Ordinary, 10⅛, and Good Ordinary 9¾ cts.

Hay and Straw.—Steady, with a fair demand for both. Quotations are as follows: Choice Cecil county Timothy, new, $21@22; fair to prime Maryland and Pennsylvania Timothy $18@20; Western Hay $19@21; mixed Hay $18@19; Clover do. $16@17. Loose Hay ranges in price from about $18 to $23 ₮ ton. Straw—Wheat $10@12; Oat do. $15@16; Rye do. $18@20.

Mill Feed.—Active and firm. We quote City Mills Middlings at $20, and Brownstuff $19.50@20; Western Bran $16 ₮ ton.

Provisions.—Quiet but steady. We quote generally as follows: Bulk Shoulders 5¾ cts.; long clear Sides 8¾; clear-rib Sides 8¾; Bacon Shoulders 6¾; clear Sides 9; Hams, sugar-cured, 12@13¼; Shoulders, sugar-cured, 8; Breasts 10¾; Lard 9¾ cts. for refined. Mess Pork is held at $20 for round lots, but it is jobbing at $15.50@16.

Butter.—Good grades in demand; common sluggish; New York State choice 26@28 cts.; creamery 29@30 cts.; Western choice 22@23 cts.; good to prime 20@21 cts.

Tobacco.—There has been quite an active movement in Ohio leaf the past week, sales of about 1,200 hhds. being reported for France and Dulsberg at an average of 5¾ cts. Maryland leaf has been quiet, buyers still holding off. We quote as follows: Maryland inferior and frosted, $2@3.50; do. sound common $4@5; do. good common $5@6; do. middling $6.50@8; do. good and fine red $8.5 @10; do. fancy $10@14; upper country $4@16; do. ground leaves $3@8; Virginia, common and good lugs, $3@5.50; do., common to medium leaf, $6@8; do., fair to good leaf, $8@10; do., selections, $12@16; do. stems, common to fine, $1.50@2.

Live Stock.—*Beef Cattle*—Good ones scarce and in demand. Common ones in excess. We quote sales as follows: Best Beeves, $5.12@5.37; first quality, $4@5; medium or good fair quality, $3@3.75; ordinary thin Steers, Oxen and Cows, $2@2.75; extreme range of prices, $2@5.37½; most sales were from (per 100 lbs.) $3.50@4.50. The demand is only fair for the best Cows. We quote at $25@45 per head, as to quality.

Swine.—Demand moderate. We quote at 5¾@7 cts., few sales being recorded at either extreme, nearly all dealers quoting from 6@6¾ cts. ₮ lb. net.

Sheep and Lambs.—Trade is slow and prices a fraction off. We quote butcher Sheep at 3¾@4¾ cts., a few Extra at 5 cts.; Lambs 4@5¼ crs. ₮ lb. gross. Stock Seeep $1.50@3 each; Ewes sell at $2.50@3 ₮ head; Wethers 3½@3¾ cts. ₮ lb.

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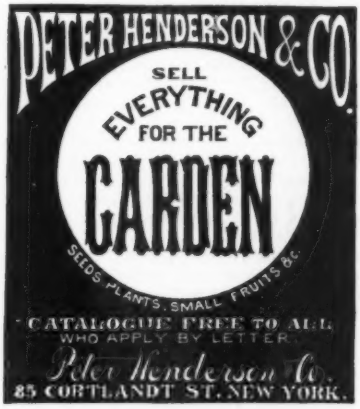

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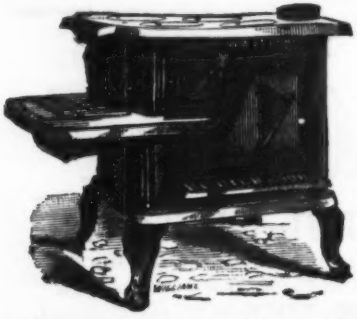

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I have for immediate sale: **1 trio BUFF COCHINS, $4; 1 trio PARTRIDGE COCHINS, $4;** also **White and Brown LEGHORNS, HOUDANS, HAMBURGS, DOMINIQUES, LIGHT BRAHMAS, &c.,** at prices equally low. Write for particulars. A lot of LIGHT BRAHMA COCKERELS—good stock birds—at $1.50 each. Address

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DENTON, CAROLINE CO. MD.

☞ FALL OF 1880. ☜

My new "PRICE-LIST" for coming fall is ready, and will be mailed free to all applicants giving Post-Office address *plainly written*, (including name of county.) My prices are "SUB-SOILED," so far as a downward tendency goes; while I am happy to inform my former customers and all the readers of the *American Farmer* that the growth of my stock was never better than the present season. Peach and Apple trees are particularly fine, while the list of valuable varieties has been greatly increased. A complete assortment of all kinds of Fruit, Shade and Ornamental Trees; an immense stock of Grape Vines, Asparagus Plants, Flowering Shrubs, &c., &c. Correspondence solicited.

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Eclipse Wind Engine.

Victorious at Three World's Fairs. Has taken 3 Gold, 5 Silver and 2 Bronze Medals, and 150 First Premiums.

The railroads of United States and Canadas put in more ECLIPSE MILLS than all others put together. We export more than all others combined. Our Mill is not sold as a cheap Mill, but as the best Mill in the world. For last four years I have never received a cent for repairs of any of my mills that I have put up, and have replaced several other mills by the ECLIPSE. We make 18 sizes, from 8½ to 60 feet diameter, from 2-man to 40-horse power, and used for pumping from wells, springs, brooks, rivers. Also have POWER MILLS for grinding grain, shelling corn, sawing wood, cutting fodder, &c., &c. I furnish Mills separate, or will contract to do whole job, including tower pumps, piping, &c., plain or ornamental, and will guarantee to give satisfaction, and refer to the following parties who have them:

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THE EMPIRE THRESHER AND SEPARATOR, in sizes suited either for farm purposes or thresher's outfit.

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Pure Ground Bone,

STRICTLY PURE

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400 Acres in Nursery Stock! 100 Acres in Orchards! 100 Acres in Small Fruits!

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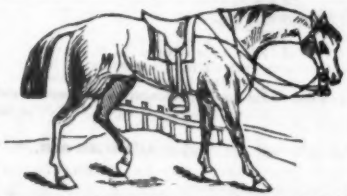

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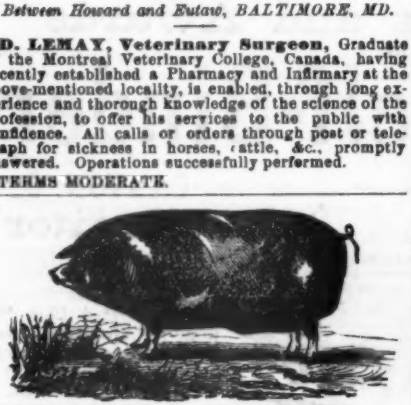

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All bred from the most noted and fashionable strains of Prize-Winning Stock.

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It is made of the best and most concentrated materials, possesses all the virtues of PERUVIAN GUANO and BONE-DUST combined, and is well adapted to Wheat, Corn, Oats, &c., producing abundant crops where all others fail. Having a large percentage of Soluble and Precipitated **Phosphoric Acid and Ammonia,** it is without doubt **the richest Commercial Fertilizer in the country.**

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Made only of Slaughter-house Bones, contains a larger percentage of AMMONIA and BONE PHOSPHATE LIME than any other brand in the market.

WE OFFER

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It is richer in Soluble Phosphoric Acid and Ammonia than any similar article in the market.

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Muriate Potash, Kainit,
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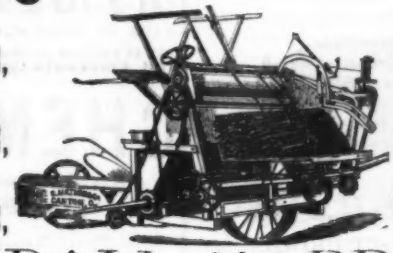

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As Layers, the WHITE LEGHORNS have few superiors, and are strictly **non-Sitters** Can furnish them at **$3 per trio,** boxed and delivered to railroad.

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CAHOON'S
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For sowing Wheat, Rye, Barley, Oats, Timothy Seed, Clover Seed, &c.

With this machine a man can sow from FOUR TO EIGHT ACRES PER HOUR in the best manner. Every farmer should have one. PRICE SIX DOLLARS.

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Garmore's Artificial Ear Drums

PERFECTLY RESTORE THE HEARING and perform the work of the **Natural Drum.** Always in position, **but invisible to others.** All Conversation and even whispers heard distinctly. **We refer to those using them.** Send for descriptive circular.

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ONLY $15 PER TON—16 BAGS.

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Dyspepsia, Nervousness, Bilious Attacks, Sick and Nervous Headache, Constipation of the Bowels, Kidney and Bladder Affections, Sour Stomach, Chills and Fevers, Female Diseases, All Bilious Affections, and is an Excellent Stomachic.

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I am prepared to furnish PIGS of the best blood at the following prices, boxed and delivered to express:

SINGLE PIG. $6.
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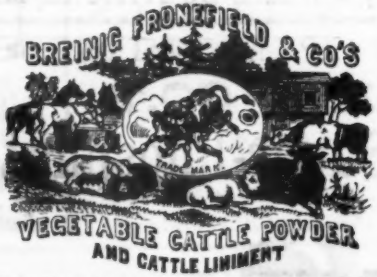

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BUCK AND EWE LAMBS; also a few five-year-old Ewes. Lambs $10 at farm; the others at reasonable prices.

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FOR SALE—A few Herd-Registered AYRSHIRE BULL CALVES.

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Window Sashes, Doors, Blinds, Mouldings, Brackets, Hand Railings, Balusters, Newel Posts, Bracket Shelves, Barge Boards, Window Caps, Door Caps, Pews and Church Work, Blind Hinges, Builders' Hardware, Wood Mantels, Window Frames, Door Frames, Paints, Oil, Putty, Glass, Lumber, Bricks, Lime, Sash Weights, Sash Cord, Porch Columns, Tree Boxes.

THE BEST WORK AT LOWEST PRICES.

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From Mr. J. D. Guthrie, of Shelby county, Ky., State Grange Purchasing Agent, and famous grower of Long-Wooled Sheep.

SHELBYVILLE, Ky., May 6th, 1878.

MESSRS. M'GINNIS, TAYLOR & HOLDERBY:

GENTLEMEN—In reply to your request for my opinion, I take pleasure in saying the M'Ginnis Harrow has given universal satisfaction.

It pulverizes deeply, and its smoothing capacity is equal to any Harrow I have ever tried.

It stands unrivaled for destroying the toughest sods with its knife-like teeth, perfectly reducing the sod with two harrowings, presenting a thorough seed-bed for any kind of grain or seed.

Its draft is much lighter than the ordinary Harrow.

It is equal to the Thomas Harrow in lightness of draft, while it possesses decided advantages over the Thomas in DEEP PULVERIZATION, STRENGTH AND DURABILITY.

I have said thus much from observation of its working on the field.

While the Thomas Harrow is better adapted for the shallow covering necessary for very small seeds, for general purposes I think the M'Ginnis Patent IS WITHOUT A RIVAL.

Yours truly, J. D. GUTHRIE.

GILPIN'S VEGETABLE LIVER PILLS

Are prepared, with great care, from medical plants, are *coated with sugar* that they may be taken by the smallest child and upon the most delicate stomach; are intended especially to act upon the Liver—thereby relieving all such diseases as COSTIVENESS, HEADACHE, PARALYSIS, DYSPEPSIA, COLDS, JAUNDICE, and all diseases of a Bilious origin. No better evidence can be offered in favor of these Pills than the very fact that where their ingredients are known to family physicians, they are using them in their private practice. We append the following from one of our most prominent physicians:

OAKLAND, June 28, 1869.

DR. GILPIN—After carefully examining the formula of your Sugar-Coated Pills, I feel it but justice to say, that the combination is certainly perfect, and comprises the only remedies I ever believed were the proper ones to be used in diseases of a bilious origin. I shall take pleasure in recommending them not only to my patients, but the entire medical profession. Yours truly, J. M. WISTAR, M. D.

From one of the leading retail druggists of West Virginia:

WESTON, W. VA., June 18, 1869.

MESSRS. CANBY, GILPIN & CO.—Gents: Please send by express twelve dozen Gilpin's Vegetable Liver Pills. I have the most flattering accounts from all who have used them, and believe the day is not far distant when they will supersede all others. Yours, F. M. CHALFANT.

We could fill several pages with certificates, &c., from prominent men throughout the country, but prefer to let the Pills in the future, as they have in the past, rest entirely on their own merit—knowing that wherever they are known their use will pass down from generation to generation.

GILPIN'S VEGETABLE LIVER PILLS are sold by all respectable Druggists and Country Storekeepers throughout the United States and Canadas.

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Prices and Descriptive Circulars furnished on application, and correspondence solicited from all wanting anything in my line.

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WHY DOES

a woman's health so often break down at an early age?

Put a man at the wash-tub, let him get heated from the hot suds until every pore is opened, then let him stand over the filthy steam that comes from scalding and boiling clothes, that are full of sweat and exhalations from the skin, and his health certainly would break down before long; and yet this terrible ordeal is exactly what

A WOMAN

has to go through on wash-day; and besides, with her clothing wet from perspiration at the hot work, she has to risk her life by going out in the air to hang up the clothes.

Even those not at the work are in the unhealthy atmosphere; its smell, so apparent to visitors, showing that it finds its way through the house,—the family, however, often becoming so accustomed to the peculiar odor from its own wash as not to notice it.

These facts, which are known to be true by every housekeeper, readily explain why so many women suffer with Rheumatism, Weak Nerves or Neuralgia, and

LOOK OLD

while yet young in years; and Physicians and Boards of Health cannot draw attention too strongly to the injurious effects of the usual way of washing, with its necessary steam and scalding or boiling to get the clothes pure and sweet-smelling, especially as it is often the direct cause of those dreadful diseases, Diphtheria, Typhoid Fever and Consumption. Fortunately this trouble can be avoided; scalding, boiling and steam done away with; clothes made sweet and beautifully white; **from the saving in fuel, the wash done at a less cost than when home-made Soap is used,** and very much

SOONER THAN

by the old way, by using **FRANK SIDDALLS SOAP,**—a Soap so Purifying and Cleansing that the dirtiest clothing can be washed in lukewarm water, with very little rubbing, and Clothes, Bedding and utensils used by the sick disinfected and cleansed without either scalding or boiling; while the work is so light that a girl of 12 or 13 can do a large wash without being tired; and yet so mild and healing is this Soap, that for toilet and shaving it has no equal, and physicians advise its use in preference to imported Castile Soap on wounds and sores and to wash the youngest infants.

Now that there is a remedy for this "great wash-day evil" **so economical in its use as to be within the reach of the poorest,** there is not a women or

A MAN

who is not directly interested in having used in their homes **THAT WONDERFUL SOAP,** which, **when properly tried,** not only does away with the hard work, offensive smell and fearful steam on wash-days, but makes the white pieces whiter, colored pieces brighter and flannels softer than they can be made by washing the old way, and also leaves every article as clean, as sweet and as pure as if never worn.

NEARBY TESTIMONIALS.

From General William Craig, of MORNING HERALD; residence, 226 Lanvale Street:

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From Manager of Dexter Laundry, Washington, D. C.; 301 Sixth St., corner C St., N. W.:

No laundry or family can afford to be without **FRANK SIDDALLS SOAP.** We never scald or boil, and use no other Soap, and have a reputation second to no laundry in Washington for white clothes,—the superior work we haye been enabled to turn out having secured us the trade of some of the best gentlemen's furnishing stores in the city.

Sold by Retail and Wholesale Grocers.

☞ To points where not yet introduced, a trial cake will be forwarded to any part of the United States, postage prepaid, on receipt of price, (10 cts.,) in money or stamps.

Address all letters,

Office FRANK SIDDALLS SOAP, 718 Callowhill St., Phila., Pa.

Just think what you will save by this easy way of Washing!

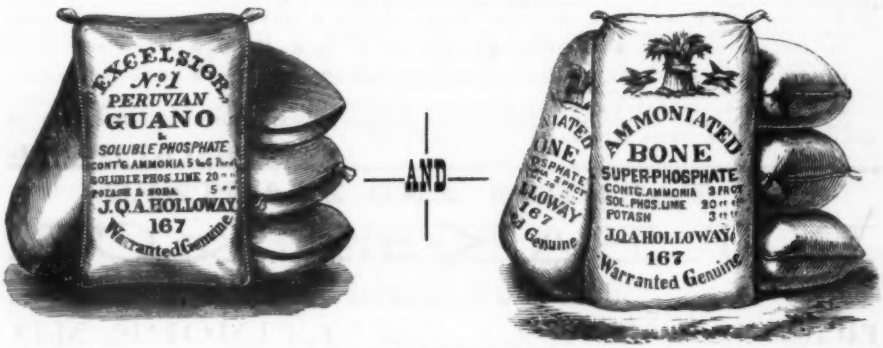
Get a Cake and Try it for Yourself Next Wash-day.

TO WHEAT GROWERS.

The undersigned, PIONEER in the manufacture of Fertilizers in this city, and ORIGINATOR in 1858 of the Formulas and processes of manufacture of

"Excelsior" and Ammoniated Phosphate,

So well and favorably known by the Agricultural public, relying upon his experience and personal reputation hitherto acquired in the uniform excellence of these Fertilizers, as manufactured by him, continues to offer them to the Farmers and Planters of Maryland and Virginia, with the assurance that the high standard quality of each will be maintained as heretofore.



The above are the most concentrated FERTILIZERS ever offered to the farmers and planters—combining all the stimulating qualities of Peruvian Guano, and the ever-durable fertilizing properties of Bones, in fine, dry powder, prepared expressly for drilling,—it is the universal opinion of the farmers of Maryland and Virginia, after over twenty years experience in the use of the EXCELSIOR manufactured by me, in growing Wheat, that an application of 100 pounds is equal in its effects to 200 pounds of any other Fertilizer or Guano, therefore fully 50 per cent. cheaper.

With my present advantages and superior facilities for manufacturing, I challenge competition with any Fertilizer sold in the United States, in Quality, Mechanical Condition and Price.

By strictly adhering to my Original Formulas, using only the most concentrated materials, and superintending in person their manufacture—as for the past twenty years—

Uniform Quality is Guaranteed.

☞Farmers, to secure the ONLY GENUINE EXCELSIOR and PHOSPHATE, prepared according to my Original Formulas established in 1858, should see that every Bag is branded as above, with the ANALYSIS and MY NAME IN RED LETTERS.

J. Q. A. HOLLOWAY,

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DEVON CATTLE
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FOR SALE—Thoroughbred young **Devon Bulls** and young **Rams** of the Shropshire breed; several of the young bulls were sired by the IMPORTED BULL MASTER JAMES, the winner of several prizes in England; amongst others the first prize given to his class at the show of the Royal Agricultural Society of England, held at Birmingham in July, 1876. The young Rams were all sired by IMPORTED Rams, purchased at high figures, from one of the very best flocks in England, and several of them are out of Ewes recently imported from the same flock as the Rams, the others being out of Ewes obtained from the celebrated flock of Mr. T. Conyer, of Waldberg, near Haverstraw, in the State of New York. The young Bulls offered for sale are by MASTER JAMES, the sire of the Grand Prize Bull LORD NEWSHAM, and MASTER JAMES himself gained first prize of his class at the Birmingham show of the Royal Agricultural Society of England in 1876. Particulars as to pedigrees, prices, &c., may be obtained by applying to

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ROSES on their own roots, with the newest of **BEDDING-OUT** plants by the dozen or 1,000, for which we have issued a separate Catalogue.

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All PURE Chemicals for mixtures, compounds of formulas for fertilizer mixtures, as low as any house for cash. Write for prices.

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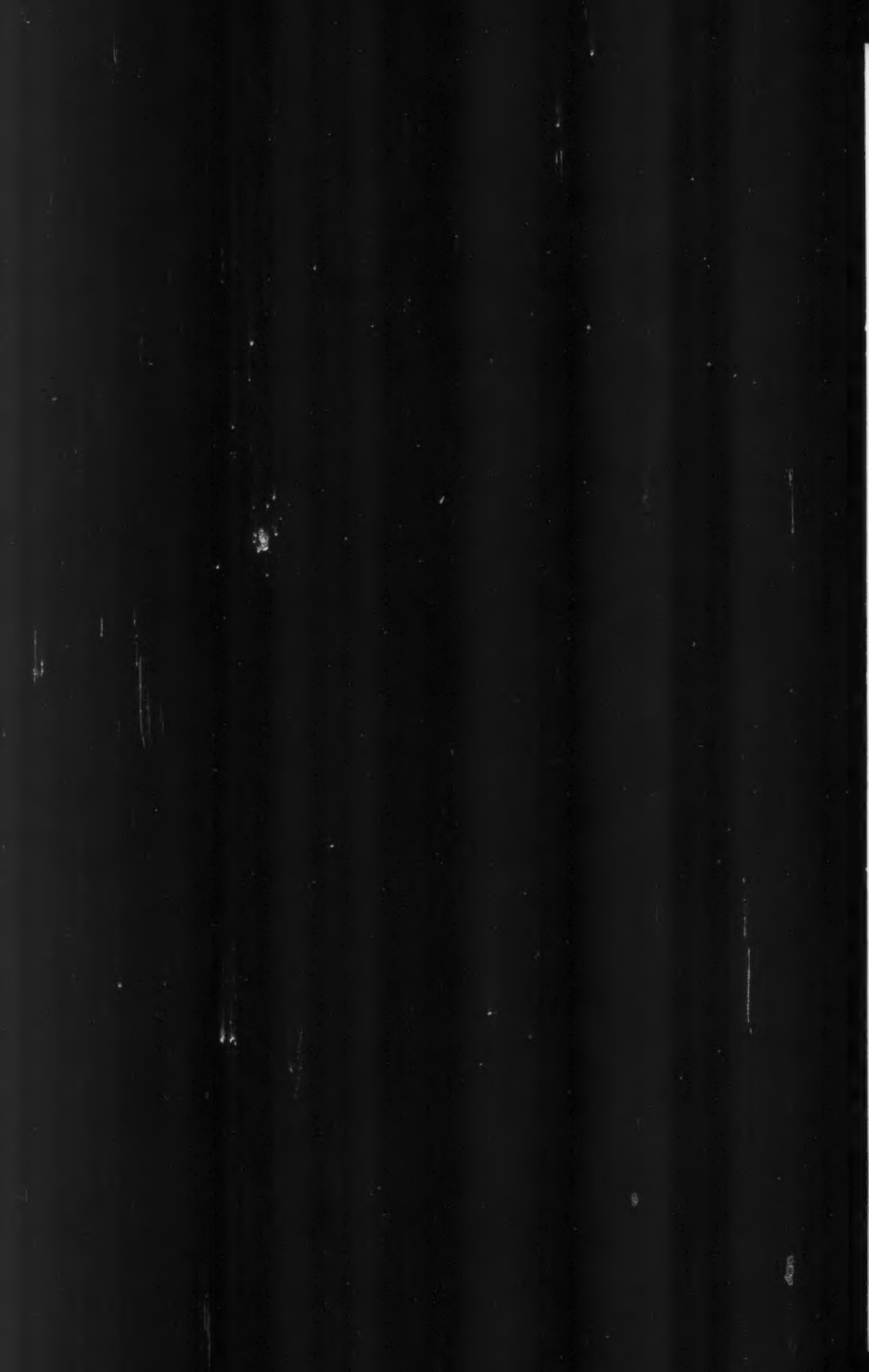
For Herd-Book Jersey or Ayrshire Cattle, bred from stock selected in person from best Northern breeders and from "Centennial" Stock Exhibition. Cotswold, Leicester, Shropshire and Southdown Sheep, all bred from best imported stock, and Lambs of each breed for sale in August. Herd-Record Berkshire Swine of best strains, and Essex surpassed by none. Poultry—Choice, well-marked young fowls from all of our varieties will be for sale this fall. Orders for eggs from all classes have closed, except Leghorns. We will continue to fill orders for Leghorn eggs, of either the brown or white variety, at $1.50 per dozen. More premiums have been awarded to our stock at the Virginia State Fairs than that of any other exhibitor in the State. And we would refer all to the whole community in which we live and where our Senior has resided for more than half a century, and particularly to all those whom we have supplied with stock, both North and South,—as we always endeavor to make our stock our best advertisement, and guarantee satisfaction.

Entered at the post-office at Baltimore at second-class rates.



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We are now offering to the Trade the following WELL-KNOWN BRANDS OF GOODS, which we guarantee fully up to Standard:

SLINGLUFF'S

DISSOLVED GROUND BONE,

Containing 3 per cent. of Ammonia.

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Containing 40 to 44 per cent. Soluble Bone Phosphate.

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Dissolved South Carolina Phosphate

Containing 28 to 32 per cent. Soluble Bone Phosphate.

To meet the demand for a high-grade Fertilizer, we are offering **SLINGLUFF'S NATIVE SUPER-PHOSPHATE**—prepared entirely from Animal Bone—highly ammoniated.

Also, **SLINGLUFF'S No. 1 AMMONIATED SUPER-PHOSPHATE.** This we can confidently recommend as one of the best fertilizers sold in the market at a low price.

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Where they have introduced the MOST COMPLETE MACHINERY for compounding Concentrated Fertilizers, that their great experience has enabled them to so successfully introduce to the Planters of the Middle and Southern States.

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So well-known and of UNDOUBTED EXCELLENCE.

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A High-Grade Fertilizer of KNOWN MERIT.

Dissolved Bone Phosphate

Prepared from GROUND ANIMAL BONES.

ACIDULATED SOUTH CAROLINA and NAVASSA PHOSPHATES

AMMONIATED ALKALINE PHOSPHATE,

A complete manure, endorsed by the Patrons, who have used it with great satisfaction for the last 5 years, and is on sale by Grange Agents at Baltimore, Richmond, Norfolk, Petersburg and Alexandria.

RAW and STEAMED BONES, POTASH SALTS,

And all Fertilizing Materials in Store and for Sale.

SPECIAL COMPOUNDS PREPARED ON ORDERS.

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